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It takes me about 15 minutes to walk into the centre of town from home. On one recent stroll to the shops with some copies of the magazine to post, I was paying more attention than usual to the cars which drove past me. There were a number of reasons for this. One was that I am incurably addicted to any kind of transport, ideally with wheels but essentially anything with an engine will do at a pinch. A second reason was that I had just sold my Herald, and despite taking this drastic step because I wanted to reduce the number of cars in my care, I don't ever seem able to sell one car without immediately considering a replacement.

This tied into the third reason – for the first time in ages, all three of our children were back home at the same time, only they are no longer children and I simply don't have anything suitable for carting around five adults plus the odd suitcase or two. So as I strolled along, I was on the lookout for anything interesting enough to pique my interest – bigger than my wife's Micra but not massive, preferably cheap, and crucially with at least some sort of classic appeal. Unfortunately while some looked cheap and some were a decent size, I didn't see a single car that looked even vaguely interesting.

In a way, this shouldn't have been surprising because cars tend to only become interesting in the classic sense when most of them have disappeared from the road, or when they evoke memories that elevate them beyond being simply a means of transport for getting you from one place to another as quickly and efficiently as possible. In both cases, they are then by definition going to be a rare sight on the roads.

This is nothing new. I have lost count of the number of times I've heard readers exclaim in wonderment that this car or that car has been elevated to classic status, when the last time they looked it was just classed



as an old banger. And cars don't have to be unusual or advanced in any particular way for this transformation to occur, because usually - given enough time - increasing novelty value will do the trick for even the most mundane of designs. I am sure that in the 1980s I would never have given the Triumph Acclaim a second thought, dismissing it as a piece of modern tat with no character. Nearly 40 years later, I love it!

And that is not an isolated example. One of the cars that potentially fitted my current search criteria was a Volvo 340. Anything more staid and boring would be hard to imagine, but when I first passed my driving test, my parents drove one and they would kindly lend me the keys now and again. At the age of 17 simply driving anything was a thrill, and my memories of the model have nothing to do with style or performance, but revolve around being out with my mates, camping holidays with the family and so on. In some ways the car itself is incidental, but am I the only one who would now turn to watch one drive past on his way to the Post Office? I feel another purchase coming on!

SIMON GOLDSWORTHY **Editor**

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KEEPING YOUR CLASSIC ON THE ROAD





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GOLDEN ARROW DISPLAY GRANT FOR BEAULIEU

The National Motor Museum at Beaulieu has been awarded £74,527 by Arts Council England to reinterpret Land Speed Record-breaking icon Golden Arrow, using computer generated augmented reality and historic collections to enhance engagement for visitors. The distinctive 1929 Golden Arrow was a harmonious blend of technology and design, producing a masterpiece of Art Deco expression which paved the way for two decades of unbroken British record-breaking success. With Major Henry Segrave in the driving seat, this arrow shattered its target and set a new Land Speed Record of 231.36mph. Today, Golden Arrow is on permanent display in a multi-media presentation which also features its record-breaking stablemates the 1920 Sunbeam 350hp, the 1927 Sunbeam 1000hp and the 1960 Bluebird CN7.

This project, *The Golden Arrow – Shot* from the Past, Aimed at the Future, will complement the existing installation with a new display and interactive area. Research on the museum's rich collections will provide content for digital media and reveal untold stories of the car and those involved with it. Work will begin in January and conclude in March 2022, with the refreshed display remaining on show. The project will enable schools and universities to explore STEAM subjects (science, technology, engineering, arts and mathematics) through a focus on Golden Arrow, and the museum will also offer craft sessions inspired by its design.

National Motor Museum Director of



Collections & Engagement Andrea Bishop said: 'I am delighted that Arts Council England is supporting this project which delivers new learning opportunities for young people, a creative programme of craft sessions for adults and enhanced digital interaction in the museum. Alongside this, there will be fresh research into Golden Arrow and the collections relating to it, helping this 90-year-old car connect to new

audiences, as well as some conservation work on particularly fragile items.'

The National Motor Museum Trust's collection of over 280 vehicles is world-famous, along with its extensive range of motoring artefacts, photographic images, specialist reference library and film and video library. For more information about its collection and services, see **www.**

nationalmotormuseum.org.uk

SILVERSTONE CLASSIC 2020

Silverstone Classic is the world's biggest classic motor racing festival, with an unrivalled feast of dedicated retro races, massive eye-catching car club displays and glittering on-track parades that in recent years have been saluted with multiple Guinness World Records. Even by those lofty standards, 2020 is revving up to be an extraordinary year, not least as the Classic itself will be celebrating its very own 30th birthday. It's all happening on the weekend of 31st July-2nd August, and as part of these celebrations a special 30th Anniversary Celebration package offers all owners of pre-1990 classic cars the opportunity to purchase two adult weekend tickets, a vehicle display pass granting access to a dedicated anniversary infield display area, and a special anniversary track parade on Friday on the Silverstone Grand Prix circuit.

Adding to the party atmosphere, this summer's race card features all the evocative historic Formula 1, GT, saloon and sportscar highlights that over the past three decades have firmly established the Classic as one of the world's premier car-themed

attractions. Moreover, the two hugely-popular Formula One grids – Historic Grand Prix Car Association and FIA Masters Historic Formula One – take on special significance as it is exactly 70 years since Silverstone hosted the very first points-scoring World Championship Grand Prix back in 1950.

Away from the racing roster, many of the car clubs - which every year add to the show with massive displays – will also be honouring significant margue and model landmarks. Like the Classic, both Honda's ground-breaking NSX supercar and Vauxhall's incredible Lotus Carlton super saloon are turning 30 this year and their respective birthdays are among those being hailed. Anniversary parades will also acclaim 110 years of Alfa Romeo and Mazda's centenary, while other significant models with notable birthdays include the Triumph Stag and Range Rover – both hit 50 this year – as well as the revolutionary Audi quattro and the dynamic Lotus Exige which turn 40 and 20 respectively. Early bird tickets are available until the end of March - see

www.silverstoneclassic.com



LANCIA HERITAGE PARTS

MOPAR, alongside Fiat-Chrysler Automobiles (FCA) Heritage, has enriched its genuine parts range by launching a heritage parts department dedicated to its classic cars, thanks to the tracing of original equipment. Beginning with one of the icons of FCA history, the first parts available focus on the Lancia Delta Integrale and Integrale Evoluzione, using the original materials to produce front and rear bumpers.

The bumpers are created through the use of four pieces of original equipment that were found abandoned at the San Benigno plant. Having undertaken extensive maintenance to check all moving parts as well as electric and hydraulic circuits, the equipment is now used to mould the bumpers. They will be priced from £1170

for the front bumper and £1035 for the rear. All parts are street legal and can only be purchased through MOPAR via authorised FCA retailers or the MOPAR e-store at www.moparstore.co.uk



SVA News







A TRUE STORY... CHRISTMAS BY LAMBORGHIN!!

Our first news item for 2020 features the true story of Sterling Backus and his 12 year-old son Xander. For almost two years they have been building a real-size Aventador SV replica in their garage in Erie, Colorado, USA, using a 3D printer. A few days before Christmas father and son opened the garage door and found a real, black Aventador S instead of their replica model. Having proven with their project to be the most ardent Lamborghini lovers, they got to drive the car for some days and enjoy their very own Aventador S compliments of Lamborghini.

Q: I own a classic/collectible car AND my everyday car, how come most classic insurers don't do BOTH on a single policy?

A: The SVA have 2 specialist insurers that do this: Classic Insurance Services for cars £250k+ and our own SVA product 'SVA8Wheel' by specialist Abbeyfields Insurance and both are discounted when you mention SVA...

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MORGAN'S EPIC INDIAN ADVENTURE

Last issue we were treated to a feature on a Morgan 3 Wheeler, in which we learnt just how limited the luggage space could be in such a vehicle. That did not stop the owners of our featured car from taking it on lengthy trips to Europe, but one couple is planning an even more ambitious adventure - the Morgan Motor Company has given official backing to 73-year-old entrepreneur and philanthropist Alan Braithwaite and his wife Pat, who plan to drive their Morgan 3W on a 3500-mile, 33-day journey around India on the Trans-India Challenge.

The Challenge aims to raise £200,000 to support Indian aid NGO Goonj, and fund academic research into Goonj's 'circular economy' model. This sustainable approach recycles urban waste to use as 'currency,' rewarding rural communities for improving their local environment such as roads, water supply, hygiene or schools.

Steve Morris, CEO of Morgan Motor Company, said: 'The Morgan 3 Wheeler is the perfect car for the Trans-India Challenge because of the attention it brings: it's different and it's fun. You're always on an adventure in a Morgan and you drive with a smile on your face. Not only will this trip demonstrate what a Morgan is capable of, but you also know that it will bring attention to Goonj. It's going to be a fantastic adventure all round.'

For Alan, Morgan's support is a major



boost. 'We are delighted that Morgan has recognised the significance of the Trans-India Challenge,' he said. 'It will be a massive test for the car, but will certainly put Morgan firmly on the Indian map. With Morgan's durability, and the materials used in the cars' manufacture being sustainable and re-useable, this is the perfect choice of vehicle. It is also another milestone in recognising the 'circular economy' model

championed by Goonj."

The 3500-mile Trans-India Challenge will start from Mumbai on 1st February 2020 and take in cities including Pune, Hyderabad, Visakhapatnam, Puri, Kolkata, Patna, Lucknow, Agra, New Delhi, Jaipur, Udaipur and Ahmedabad, before returning to Mumbai at the beginning of March. It aims to visit 11 Goonj centres or projects along the way.

GLASGOW MONTE JANUARY START

The city of Glasgow will once again be the starting point for entrants on the historic re-run of the Monte Carlo Rally on 29th January. The city is the only British start point of seven European cities including Athens, Milan and Barcelona. In recent years, Paisley and Clydebank have also featured as the sole UK start locations, but it's the third time Glasgow

has taken on the role.

The competing crews will set off from the start ramp in front of Glasgow City Chambers in George Square at 7pm for the epic 1300-mile drive to the south of France. The start is being supported by Glasgow Life, the charity that delivers cultural, sporting and learning activities on behalf of Glasgow City Council.



Among the early entries is Dundee GP Colin Levin and his brother Richard who will be driving their late father's 1961 Austin A40, 25 years after he competed in the Monte in the same car. They are looking forward to the challenge. Said Colin: 'It's a great tribute to dad to attempt the Monte in his car with the added bonus of leaving from Glasgow where he lived for 83 years. Neither of us has been on an event like the Monte - we are a real couple of rookies.'

Once again the event also features the popular Monte Heritage Runs which will link with the full-scale events and take in a series of short classic routes in Scotland including starts from John O' Groats and Aberdeen. Already several crews have registered to make the start from the northernmost landmark. Before the cars set off there will be a classic car show in George Square during the afternoon, along with entertainment for spectators who'll enjoy the unique atmosphere of a Monte Start and give the competitors a rousing Scottish send-off. More info can be found at www.monte.scot

www.classicsworld.co.uk



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Paris

NEWS



NEW YEAR'S DAY GATHERING AT HISTORIC BROOKLANDS

If your New Year's resolution was to attend more classic car meets in 2020, then the New Year's Day Gathering at Brooklands Museum near Weybridge in Surrey was the perfect way to start as you mean to go on. Brooklands is the birthplace of British motorsport and aviation, and there were many proud owners showing off some beautiful machinery from British marques including Jaguar, Morris, Austin, MG, Triumph, Riley and others. Other classic marques were well represented to, and there was an area for supercars and modern classics.

The laid-back event enjoyed mild, dry weather and attracted almost 7000 visitors who enjoyed the chance to meet up with friends over a cuppa and a cake in Brooklands' fine café. Cars were parked up on the historic start/finish straight, as well as on what remains of the historic banking which made up part of the original racing circuit. Show visitors could also access all of the impressive museum's attractions and displays, which made for a fantastic start to the new year. Find out more about the museum and its car events at www. brooklandsmuseum.com

FESTIVAL OF THE UNEXCEPTIONAL

Hagerty have announced a new venue for their spectacular Festival of the Unexceptional Concours de l'Ordinaire in this, the seventh year of an event which has forged a reputation as one of the must-attend car events of the year. The date for the 2020 event is Saturday July 25th, and an increased demand for larger show space and greater availability of tickets has prompted a move to the beautiful Grimsthorpe Castle in Lincolnshire – the perfect backdrop for the UK's largest collection of mundane vehicular transport featuring exhibits wearing such upmarket badges as Ghia, Vanden Plas and CD.

As in previous years, the Festival will celebrate much maligned and long forgotten 'ordinary' classic cars and commercial vehicles of the late 1960s, 70s, 80s and 90s, and remains the only concours that applauds an Astra, believes in base-models, makes a case for a Maxi and robustly defends a Daf. In keeping with the spirit of the event, guests are very welcome to arrive in the latest supercars, but are forewarned that prime parking is offered to FSOs in preference to Ferraris, a Metro will be fawned over more than any Maserati and a Zastava will gain more privileges than a Zonda.

Once again, Hagerty's annual Concours de l'Ordinaire will be free to attend and open to classic cars and light commercial vehicles built between 1966 and 1996. Owners can register their cars for concours consideration at www. unexceptionalcars.co.uk. A limited number of public access tickets will be released in April. Once they are gone, further tickets will be for sale.

SANTA POD'S 55TH SEASON

Santa Pod Raceway has launched its 55th consecutive season of high-speed racing action. 400,000 people a year pass through Santa Pod's gates to attend more than 70 varied events on a calendar that runs from February to November, adn the championship drag racing season begins with Easter's Festival of Power, an amalgam of serious racing and the family entertainment activities that feature at many Santa Pod meetings. The first and last rounds of the FIA/FIM European Championships are the venue's flagship events, held in late May and early September respectively, with further national championship races for cars and motorcycles held through the year.

July's Dragstalgia is the highlight of the historic drag racing season. This year's 10th Anniversary event features the return of the riotous Fuel Altereds in a transatlantic rematch between America's Rat Trap, grappled through the quartermile by Ron Hope on his international farewell tour, and Britain's Havoc, which Nick Davies wrestled to US championship victory in 2017.

Also in July, Bug Jam 34 is Europe's largest Volkswagen festival and one of several weekends devoted during the year to the VW brand. Other marque-specific events include Honda, Ford, Vauxhall and BMW, and German, Japanese and American cars enjoy their own general



celebrations. The calendar also includes modified car shows, specialist and family events and public track days. Full information and tickets are available online at www.santapod.com or by telephoning 01234 782828.



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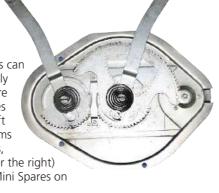
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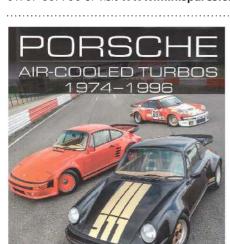
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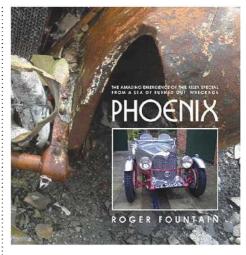




PORSCHE: AIR-COOLED **TURBOS 1974-1996**

By Johnny Tipler Hardback, 208pp, 260 x 215mm, 300 colour photographs. ISBN: 9781785006692 Price: £27.50. www.crowood.com

In this, Tipler's fourth book on Porsches, his attention is turned on the air-cooled turbos. Porsche had applied turbocharging to its racing cars in 1972, and the first road-going 911 Turbo was unveiled in 1973. The book starts with the 934 and 935 race cars that fostered the Type 930 in 1974, before moving on to detail the 964 Turbo of 1990, followed by the 993 Turbo in 1995. Gloriously illustrated throughout and rich with technical and development details, it also features exclusive interviews with racing drivers Klaus Ludwig, Jochen Mass and Nick Heidfeld.



PHOENIX

By Roger Fountain 90pp, 210 x 210mm ISBNs:

978-1-9161600-0-2 (paperback): £10 978-1-9161600-1-9 (hardback): £15

This book covers the transformation of a pile of burnt-out scrap to a beautiful recreation of a 1930s sports car from initial ideas sketched on a sheet of paper through triumphs, disasters, trials and tribulations until the author finally achieved his ambition and now has a beautiful example of prewar automotive engineering standing in his garage as testimony to his creativity, persistence and determination. This book is published by Roger Fountain Publishing in conjunction with Writersworld, and is produced entirely in the UK.

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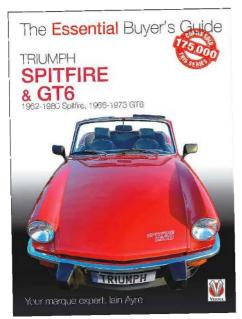
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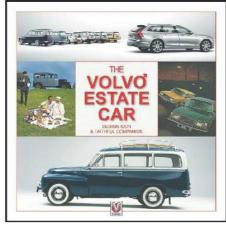


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ABOUT THE Z-CARS ZEPHYR

Regarding the image in your February issue editorial, I think you missed the fact that the image used appears to be taken from Z Cars as I'm sure that's a very young Brian Blessed on the right! You are probably right that it was a staged promo shot as the lighting seems too good to be a still taken from an action sequence.

I grew up watching Z Cars and Softly Softly in the early 1970s. In 1972, aged 6, I told my parents I wanted to be a policeman just like in Z Cars. In 1986

at an interview for the Met Police, I was asked what made me want to be a policeman. My answer? Z Cars! It must have been a good answer as in 2016 I retired after 30 years in the Met. I never drove a Z car though, it was SD1s, Metros, Cavaliers, Sherpas and the odd Allegro when I joined. The Sherpas and Cavaliers still had Winkworth bells behind the grille operated by a toggle switch on the dash. Happy days.

Barry Blackmore

WHO TOOK THE HIGH ROAD?

I wonder if you would be kind enough to ask your readers if they could assist in a little research project which I have embarked upon? I am trying to trace information about the Triumph organisation during the late 1960s and early 1970s, and to this end I am trying to obtain copies or scans of the magazine High Road issued by BLMC during this time.

During the 1950s and 1960s, Standard Triumph produced a monthly in-house magazine called The Standard Triumph

Review (STR) and this makes interesting reading. However, with the merger in 1968, BLMC wanted to present a uniform front and the last STR was issued in December 1968, and for 1969 BLMC printed its own High Road. I am particularly interested in obtaining information from the magazines issued during 1969 and 1970, so if anyone can assist me I would be very grateful.

Peter Robinson Registrar, Stag Owners Club registrar@stag.org.uk



MORRIS MINOR IS TOP CHOICE

Delighted to see that you have taken on a very tidy 1967 two-door Minor as your latest project for Classics. Emily seems to have been cherished, at least in the last decade, and the overall condition suggests that this was also the case in earlier years. 37,382 Minors were produced in 1967, with twodoors contributing 17,021 (45.5%) and Travellers 12,853 (34.4%); four-doors added 7046, but Convertibles only 462 (1.24%). These low figures show why the Convertible has become quite sought after these days and why there is a strong market for converting two-door saloons which, if done properly, is an acceptable practice. Interest in Travellers is also strong, but Classics covered the

restoration of one prior to and during the move to Kelsey ownership.

The Lincolnshire branch of the MMOC holds monthly meetings at the Abbey Lodge in Woodhall Spa. (The same location as the local branch of the MGOC.) You would not need to be a member of MMOC - although we recommend you join - to participate in Lincs Branch meetings and we would be delighted to see you when time permits. Sandy and Rosie Hamilton

Good to hear from you Sandy and Rosie and thank you for the invitation, but don't worry - one of my first moves on getting the Minor was to join the club - Ed



PAINT ADVICE

I have read your series on bodywork with great interest as I have restored a good few classics over the years. Bodywork is usually brushed over in most cases, so it was good to get another view on the subject.

I did notice that the subject of primers was not covered in any detail, but the final finish is based on the quality of this coat. In my experience the only primer to use after epoxy over bare metal then filling is two pack high build primer. You have the problem of the safety issues, but cellulose or one pack primers sink into the scratch marks in the filler underneath because they are reactivated by the solvents in the top coat. I have always used it under cellulose by wet flatting it with 800 grit, then three coats of cellulose cut back wet with 800 grit followed by three more coats.

The other problem with a two pack top coat is dust, as it is wet for 30 minutes and dust will stick to it in that time. Cellulose flashes off in seconds, so much less dust sticks. I use two pack for all the inside surfaces like engine bay and door shuts, then cellulose on the outside. I would be interested in hearing any other ideas from readers on choosing paint types.

Matthew Sutton



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GRAHAM ROBSON

THE FAMILY CONSUL

t's only today that my mind slipped back to events in March 1953. Although that was exactly 67 years ago, I still have copies of The Autocar which remind me that this was the month in which the definitive Triumph TR2 first appeared, when Rootes first showed the Sunbeam Alpine, and when Ian Appleyard won the RAC rally for the second time using that legendary Jaguar XK120 which carried the NUB 120 plates. Not that the Robson family was really interested in those events at the time, for it was also the month in which my father proudly took delivery of his first new car - a straight-from-Dagenham Ford Consul. You'll immediately be able to work out how old I am when I recall that I was just old enough to get a provisional licence, and would shortly take my driving test in that very Consul, which was registered LYG 131.

Back then, of course, the family lavished praise and attention on the car. So what if it only had a three-speed column change transmission, a sensible cruising speed of 50--60mph, and cheap-and-cheerful Firestone tyres which had all the road holding of a tram ticket when the roads were wet, at that time cars were so scarce in the Yorkshire village where I was raised that

there were probably only two or three other new cars in the entire parish!

Not that father had originally ordered a Consul, for those were the post-war days when waiting lists for anything were colossal (would you believe we had to wait nine months to get a telephone, and even then it had to be a party line shared with another village resident?) so often one took whatever one could get. In his retirement years, father never tired of telling me that he had originally ordered a sidevalve 1172cc Prefect in 1948, that he'd had to wait five years (five years - and that's no misprint!) and that when the telephone call came from his Ford dealership in Skipton, it was made clear to him that the 1508cc Consul was only available on a 'take-it-orleave-it' basis, that nothing less than hard cash would cement the deal, and that the dealership was not at all interested in talking about a part exchange deal with father's 1930s Morris Twelve Series III.

As to the price, when that Prefect had been ordered in 1948 it would have cost £352, and when the Consul finally arrived five years later it cost £717. At the time, too, a new owner had to sign up for a government-administered covenant in

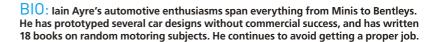


which they agreed not to sell the car within two years, this being imposed to make sure that the price of used cars did not reach ridiculously high levels. Even so, at that price one only got a slippery-surfaced front bench seat, no safety belts (they were at least a decade away), and a requirement to have a service and an oil change every 1000 miles. As to performance, let's just remind everyone that the top speed was all of 75mph, though it took 31.1 seconds to reach 60mph from rest.

This, though, was not a luxurious car. I will not get started on the Monty Python discussion about 'Luxury,' but let's just say that a simple heater/demister fitting was an on-cost option and father's take-it-or-leave-it car didn't have one, which meant that for much of the year we would all don coats, hats and gloves to go anywhere. Mother, in any case, reasoned that it was cheaper to keep warm by wearing extra layers and 'if anyone sees us driving round in summer clothes they will think we are show-offs... She, incidentally, never learned to drive, but as a youngster I loved to scrounge the loan of the car whenever possible, and on a few blissful occasions in my final year at school, I managed to drive the car to grammar school in Skipton on Saturday mornings, parking it close to the building next to the bicycles which were all that the teaching staff owned in those days. Did it help my social standing? A little, maybe, but there was more jealousy than admiration which flowed at me during those episodes.

As a piece of cost-effective engineering from Ford, the Consul (and its bigger sister the six-cylinder Zephyr) was a great success, but since it only had a 47bhp engine and that awful steering-column gear change, it could never be described as a performance car. Even so, father was encouraged to enter one or two local rallies (which involved driving tests and navigation rather than fast driving). The picture shows me with the car at just such a rally in about 1954. Although we were always outmanoeuvred by the MG TFs of the day, these events introduced me to the art of map reading, and I've always been grateful for that.







IAIN AYRE

FRACTIONAL OWNERSHIP

ractional ownership of aeroplanes is more and more common. I have one friend in Los Angeles who owns a whole plane, but he's a screenwriter and has had a few successes resulting in impressive cheques. With one such cheque burning a hole in his pocket, he bought a nice 1946 Stimson four-seater aircraft with a Franklin engine. Ironically it's currently little used due to road traffic congestion as the interstate LA highways that go from its Santa Monica airport hangar to his house near Burbank can gridlock for hours without warning. My offer of a Fesendjan treat (tastes like dark chocolate chicken) at a favourite Persian restaurant near LA airport 28 miles away was regretfully declined as it could take six hours to drive there and back. We will fly there some day.

Anyway, this month's column isn't about LA gridlock, it's about fractional ownership. Another British friend owned half an aeroplane, a scheme which seemed to work out well as the bills – very impressive bills they were in the UK too! - were shared 50/50. There were sublime moments during his ownership, for example the time when we found ourselves in the circuit with Spitfires at Goodwood.

It didn't work out quite so well for the coowner of the plane who got himself tangled up with babies and obligations, so barely used the aeroplane. It then got slightly crashed in France, and the nightmare

process of getting a French aircraft repaired in France by French mechanics took so long that it was sold there. My friend then abandoned flying and went back to yachting in a 1950s wooden pocket sailing cruiser whose £1200 Kubota diesel engine was worth more than the boat. That was also its purchase price, and the boat's annual river mooring costs about the same as flying a plane to the Isle of Wight and back for a stale cheese sandwich.

Sideslipping the narrative smoothly towards classic cars, fractional ownership looks promising there, too. Up to about four co-owners can successfully finance and maintain a boat or a plane, and realistically nearly all boats and planes spend 90% of their time stationary and tied up. Or tied down, depending.

Whatever your initial plans and dreams, vou won't actually have time to use such a toy very often. The same often applies to classic cars but if, as a group, you divide up the summer weekends fairly and plan well, everybody should be able to get everything they want out of the shared object. Quite often, owners go out together as well – by definition, your group comprises fellow enthusiasts and its members will probably become friends anyway.

This could work because while you might not have the budget for an Aston Martin, most of us could scrape up the cost of a quarter of a rough Alvis. You would also

be one of two/three/four/whatever when restoring it, and it's definitely more fun and much easier to work on something with company and help.

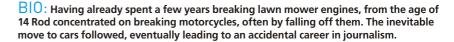
And realistically, how often would you want to use it? Availability will be excellent on weekday evenings and winter weekends anyway. You do need a formal contract specifying terms, such as each person being entitled to two high-season holiday weeks, and you need to value each share in case one has to sell. And even if all four of you all want to go to Le Mans, that's fine – take another car as well and take turns driving.

Following on from that, I'm wondering if the same system would work with wives. Having been both married and not married, on balance I like a percentage of it. If I had a quarter share in a wife, that might be ideal. Maintenance time and costs would be much more reasonable, divorce would be much more affordable, and in any case probably only one sharer would be divorced at a time. And before you accuse me of being sexist, this plan would be excellent for the wife too as she'd have a harem. She'd get a lot more over-night attention, which conventional marriage seems to knock on the head rather. If she likes nagging, that's four sets of faults to complain about rather than just one. She would get way more general attention, because each guarterhusband would appreciate her a lot more. She wouldn't get just one begrudged annual package trip each year, but at least four decent holidays - she'd have to be booked, like the Alvis. Or possibly with the Alvis. If she was occasionally nasty, the quarter-husbands would share the grief and have a support group as well. It is a great plan, and I recommend it to the House.

While we always welcome contributions to the Letters page, may I take this opportunity to point out to readers (and non-readers such as Mrs G) that opinions expressed by lain are not necessarily those of Classics magazine, and also that lain has a keen sense of humour - something that I too would recommend heartily to the House! - Ed



Fractional ownership is common with planes, but Iain reckons it could work for classic cars too.





ROD KER

REELING IN THE YEARS

earing my motorcycling crash helmet instead of my Classics woollen hat reserved for the Herald, I recently worked on a magazine feature that involved me riding the same bike on the same journey as one pictured in a black and white photo taken in 1979, but then lost for 25 years. How have things changed? Looking for answers when the photograph first resurfaced in 2004, I also did a repeat run back then, trying to recreate the same image. Although it was in 2019 that I attempted the most recent re-recreation, it probably would have made arithmetic sense to do the next follow-up in 2029 to stick with the theme of once every 25 years, but I thought that would be a bit risky in case petrol vehicles are banned or I'm too decrepit to operate a twist grip.

When I say the same bike, I really mean the same model of bike of course, although it would certainly be interesting to track down the exact machines used in 1979 and 2004. For two-wheeler people out there, we're talking Kawasaki Z900s, which have a very good survival rate, so it's entirely possible that the other two are hiding in sheds waiting for stardom.

The intention for 2019 included taking a picture in the same place, with my aged self sitting on the bike beside a large reflective puddle as per the original photograph. Unfortunately, the best laid plans of mice and motorcyclists have a habit of falling

apart. After much ado getting hold of a suitable steed, autumn was turning into winter, whereas the 1979 and 2004 runs had happened in relatively balmy weather. Problem number two was the short-term unavailability of my old school pal Pete, the photographer who took the original shots. But the show must go on, so I had to snap them myself with a timer and mini tripod the pose might have looked static, but I only had 10 seconds to compose myself!

There was fortunately no sign of snow in November, but you might recall that this was the week Noah started selling tickets for Ark world cruises. The roads were in appalling condition, covered in mud and gravel. Call me a wimp, but I feared for the safety of both myself and the bike, which was valued at somewhere near £20,000. About £19,999 more than the bloke riding it in other words - journalists are expendable, but genuine Kawasaki Z900 exhausts are gold dust and falling over in a puddle would cost about £5000, I reckoned.

Not being in seasonal synch with the previous runs had another unwanted effect in that it was getting very, very gloomy by the time the top secret photo location came to view. In the 1970s we only had primitive rolls of film, but by 2004 digital had begun to displace analogue. Modern digital cameras can cope amazingly with low light, but what they can't do is move the sun round the sky a bit so the Kawasaki doesn't

look like a silhouette. Meanwhile, the artistic puddle refused to move to the position its ancestor took in 1979. That was actually the fault of highways operatives, who had built earth banks to

stop us driving more than a few feet into the countryside, and speed humps to damage our tyres and launch us into wobbles. So for a variety of reasons my attempted time travel didn't go too smoothly, although reading the 2004 article and comparing it to my latest day out showed that a lot had changed over the 60 mile route.

Still, the event made me think [It must have been the bumps from all those pot-holes - Ed] that maybe I should try a similar nostalgic exercise in a car to provide extra contrast. I have a hunch that the four wheel version would include a lot of getting stuck in traffic and I'd spend the time wondering if the radiator was about to explode. The most likely candidate for the task was my Triumph 13/60 Convertible. Adopting the 'same model' policy would have given me a 40 year story, but there's a flaw because the Herald I bought in 1979 (a few weeks after the Kawasaki expedition, in fact) was sold in 1981, replaced in 1982 by the example I still have now.

Thinking back again (cue sound of frenzied whirring from inside of head), I did a few 'Great British Car Journeys retraced' stories for CM's sister publication, Classic Car Mart, including a couple of jaunts to Wales with a bicycle crammed in the back. That required around 150 miles by Triumph power and 40 miles by pedal power on a tour of Lake Vyrnwy and Bala to celebrate the Herald's 25 years in my hands. Even with all the lycra long-johns in Llandudno, that's one thing I won't be attempting in winter.

It's a shame that a major computer crash in about 2011 frazzled a lot of my old word processor files, so I don't know exactly what was said and what has changed over the years. I have paper issues of some previous accounts of these epics, but others just vanished in a data cloud, to use geekspeak. Technology isn't always wonderful.



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f I was asked to think about a British car manufacturer that epitomises style, speed and engineering prowess, I'd immediately think of Jaguar. Particularly in the early postwar years and through the 1950s as this was when Jaguar's talented engineers had penned the remarkable XK straight six engine range and fitted it into incredibly beautiful cars of the time. Beautiful cars like this XK120, a car that does exactly what it says on the tin – it was called the XK120 simply because it houses a 3.4 XK engine and is capable of reaching 120mph.

However, it's not just about the speed, because this is the marriage of a famously wellengineered power plant with the stunning grace of one of this country's most beautiful two seater sports cars. You may think that I sound a bit biased here and figure that I must own one. Unfortunately not, and as much as I'd love to, I'm forced to revere them from afar. That is, of course, unless I am given the chance to get up close to one so I can share the experience in a magazine. Kind of like now, in fact...

This particular XK120 is

owned by a very lucky chap called John Moulds, someone who adores a bit of classic British motoring and who has a very definite style preference because he also owns a delightful Triumph Roadster from the late 1940s, which I have also had the pleasure of photographing. However, we are here today for the Jaguar.

John had found this one for sale on the internet in 2015. And you know how cars on the internet always seem to be located at the other end of the country? Well, in this case the right hand drive version was

even further away, way over in Sweden in fact. John got in touch with the owner and had a chat, but soon learnt that he wouldn't consider selling unless the car had been viewed. So John and a mate found themselves winging over to Sweden for a closer look.

The then owner, Christer Jernkrrok, very generously met them at Stockholm Airport, took them to see the car and wined and dined them. The red carpet treatment must have paid off because John bought the car, but not without a bit of a hiccup – it was a Bank Holiday



in Sweden and so the money wouldn't transfer until after the boys had got back home. Christer must have had an incredibly trusting nature or John an extremely honest face because Christer let them drive away before the funds had cleared. I'm not sure I would have done that, but then again maybe I just have a more suspicious nature!

The return trip home was not entirely without incident, even though the car was in very good order and still looking great after its last restoration back in 2007. The problem was that it

had been garaged for the winter and was now pulling first to the left and then to the right under braking. 'It also stuttered to a stop at least ten times due to a temperamental fuel pump,' John admits. 'The strange thing is that we kept looking for a different cause each time it stopped instead of just giving the pump a whack with a hammer straight away. That could have saved hours.'

Despite these hiccups, two days and 2000 miles later the car was home. At that last full restoration in Sweden in 2007, the car had been finished in Jaguar 735 Green Metallic, just as you see it now, except that wasn't the original colour when new. The first owners were Cinque Ports Aviation Ltd, who were owners of Cinque Ports Flying Club at Lympne Airfield in Kent, (who also incidentally were part of the group that ran Brooklands after the war). Quite a prestigious and historic start for our XK. Anyway, it duly arrived as one of the last XK120 DHCs (Drop Head Coupés) in early 1954 finished in French Grey with a red leather interior.

1967 saw the arrival of another owner and another

colour, as a Mr D.J.R. Ellis of Devon bought it and had it painted dark blue. By 1976 he'd had the car restored and put it up for sale, but by this time the colour was Old English White!

An advert from 1977 shows the finished car up for sale at a mere £3500, a price low enough to entice the next owner, a French chef by the name of Bertrand Wilmart. Bertrand had it re-registered to a Swedish plate and kept the car for some considerable time, apparently travelling between Sweden and France regularly. The car finally ended up in

« Sweden permanently in the hands of Christer Jernkrrok, who undertook another full restoration of it between 2007 and 2008.

I have waxed lyrical about this car, but it's not without good cause so if you don't mind, I'm going to remind you all how great these cars and that XK engine truly are with a bit of a history lesson. You at the back, sit still and pay attention!

I've already extolled the virtues of the XK engine, but it is worth noting that the same design in various capacities was used extensively throughout the Jaguar range right up until 1992. And of course you also need to remember that Chairman William Lyons was very much attuned to racing, just as much as he was with the luxury market, and the XK120 had racing at its heart. You only have to look at those slinky smooth lines down the flanks to see that speed is built into its DNA. In fact, you can virtually see the leaping Jaguar mascot penned into those lines.

Many records, accolades and wins for Jaguar were to come with the XK120, such as a 132.5mph Flying Mile in 1949 during a demonstration to the press of a production car on a high speed autoroute in Belgium using only the second production car. Then, a year later and partnered by Stirling Moss, Leslie Johnson – who was famous for his associations and



That's not a real cat enjoying the soft leather and polished wood of the Jaguar's interior, but it certainly catches people out at shows.

record attempts with Jaguar - drove another production car at an average of just over 107mph for 24 hours. After yet another feat of driving the same car at nearly 132mph for a solid hour in 1951, Johnson was heard to say: 'I could've gone on for a week.'

This off the cuff remark led to the most incredible feat of all when he, along with Stirling

Moss, Bert Hadley and Jack Fairman, drove an XK120 fixed head coupé for seven days and seven nights at an average speed of just over 100mph on the banked oval at Montlhery near Paris in 1952. That is a feat you just can't comprehend when you consider the tyre technology of the time. It certainly makes me shiver at the thought, especially when you







realise that Johnson took on the Herculean task of driving a nine hour stint on his own when the car broke a spring and he was not prepared to risk the lives of the other drivers until it could be fixed. They were a different breed, you could say.

Race and rally wins and high placings throughout the same time period as the record attempts were also pretty prevalent. There were assaults too on events like the Silverstone Production Race, the Tourist Trophy, Tulip Rally, Alpine Rally, Nascar in America and of course Le Mans, world events that proved beyond any



reasonable doubt the superb quality and performance of the Jaguar XK120

Speaking of successes in the US with Nascar, the XK did particularly well in the American market too. In reality, far more XK120s were built for export than for the home market with only just over 1600 cars built RHD out of the 12,000 made. Just like the Beatles, being a hit in America was very important indeed, and this was helped in no small way by some pretty famous people opting to be seen in the very British sports car. Humphrey Bogart, Gary Cooper, Tyrone Power and



Gone with the Wind star Clark Gable all owned Jaquar XKs. Gable may not have given a damn about Scarlett O'Hara, but he certainly cared about what he drove.

Enough of the generic fame and history of this great car though, I think we should turn our attention back to John's trusty steed. Naturally with all the major restoration work having been done some years before, the car was sound and apart from sorting out the problems encountered on the trip home after buying it, all John and his wife Mandy needed to do was enjoy their



new purchase. And enjoy the car they did, but not without making it just a little bit more user friendly for the congested roads of today.

'After I had sorted out the reliability issues with an electronic fuel pump,' John tells me, 'I decided to improve the drivability by installing electronic ignition and fit a set of disc brakes up front, along with replacing the dynamo with a suitable looking alternator.'

All sensible things I guess, but the purists out there may have something to say about fitting disc brakes. Mind you, there's no way of telling that the





« conversion has been made because the original single piece wheels hide them from view. There's more to come, though!

'The one thing I've had fitted that really transformed the car was powered steering,' John continues. 'I'm not built like a racing driver, which means that the steering wheel is rather close and because the wheel is large and the steering is heavy to start with, I found it uncomfortable and hard work to manoeuvre. Powered steering was the only way forward for me, so I have had installed an EZ Power Steering system which attaches to the steering column behind the dashboard.

I've seen these clever electric power steering conversions before and can assure purists that it is completely hidden and doesn't affect the characteristics of the car other than providing the extra assistance. I'm always an advocate of anything that makes living with a classic that bit easier, more enjoyable and above all safer.

The solid steel wheels mentioned earlier were standard fitment to these cars rather than wire wheels often seen on sports cars of the era. This is because of the spats fitted over the rear wheels which not only helped with the aerodynamics of the car, but helped complete that sleek



With a swept volume of 3442cc, the DOHC XK straight-six engine delivered 160bhp at 5000rpm in 1948.

look. The fitment of these spats meant that there was no room for the knock-off centres of wire wheels. Although sometimes these extra panels could pop off when least expecting it, as John tells me. 'I was tearing around the country roads of Dartmoor in the Jag when I hit a dip in the road and heard a loud clang from the back, only to see the rear spat cart wheeling down the road in my mirror,' he relates. 'I stopped and picked it up, then carried on with my

journey. I did another 250 miles before returning home, only to find that I had snapped the chassis near the spring hanger. Cheshire Accident Repair did a great job of cutting out the damage and realigned the slightly twisted chassis.'

This car may be one of the last 120s built and a rare one at that as only 295 RHD Drophead Coupés were made, but that doesn't mean it gets mollycoddled. John and Mandy enjoy their lovely Jaguar

whenever they can, going on touring holidays all over Europe as well as taking in as many classic shows as they can in the summer months. If you get to see the charming couple and their beloved Jag at a show, stop and have a chat. You will have their adventures regaled to you with exuberant enthusiasm, as well as probably getting a nice glass of red pushed into your hand while looking around this simply delightful piece of Jaguar history.



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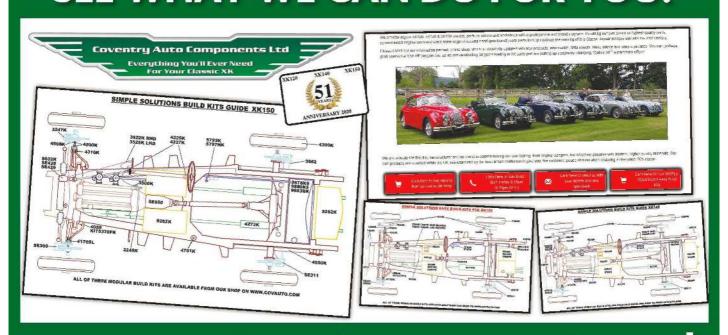


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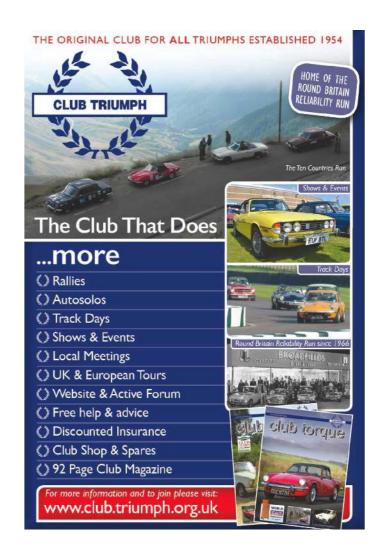
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TWO EXTRA WHEELS

Richard Pollard went looking for a motorbike, but ended up with this TR6 sports car instead. On the face of it that was a curious mistake, but there were mitigating circumstances – and, it seems, no regrets. STORY TOLD TO SIMON GOLDSWORTHY

have owned a lot of Triumph motorbikes over the years, but even though I've had a lot of cars pass through my hands too, but before this TR6 only one of these has ever been a Triumph. Your readers might not know this, but Triumph in Meriden built a TR6 motorbike from 1956-1973. I'd never had one of those either, and one day I decided that this was a gap in my motorcycling CV which needed filling.

So I went online and typed TRIUMPH TR6 into the search engine. Obviously, both cars and bikes popped up. In the past I'd restored a Jaguar E-Type, but this was in the very early 1980s and back then you didn't restore cars so much as

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get them ready for the next MoT. I used to do cars up and then sell them on, occasionally coming a cropper but usually turning a profit. However, classics from the 1950s-1970s always have more rust than you anticiate. I'd always promised myself I would never do another car because they needed too much welding, but when this TR6 popped up on my screen, it was described as rust-free...

The car had been reimported to the UK from Arizona in the USA, hence the rust-free claim. Well, to be more accurate it was rot-free because there were inevitably little bits that needed work here and there, but even today it has its original chassis,

and all the outer panels are original too. I can only assume it was always in Arizona, because a car that ends up there before being shipped back to the UK could just as easily have spent the first 20 years of its life in New England and be as rotten as anything over here.

Oddly enough, I know plenty about the car's first weeks from the Heritage certificate, then virtually nothing about the next 40+ years. It was built in April 1976 (so it is a very late example of the model) and dispatched on 13th May to British Leyland Motors Inc via Baltimore in the USA. It was Inca Yellow with a black interior and hood, while other listed items were inertia

reel seatbelts, 185x15 Michelin red band tyres, a laminated windscreen, tonneau cover, MPH speedo, jack, tool roll and spare wheel.

I even know that it was shipped from container berth 201 at Southampton dock, but very little after that! I do have a name in the paperwork of its owner in the States, plus on the back of the glovebox lid there is a drawing of a native American and a lion with his initials on, so I guess he was an artist of some sort. I have tried

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READERS' CARS THE 'OTHER' TR6

him and I believe he still lives in Buckeye, Arizona, but I've not been able to get in contact yet.

When I saw the TR6, I'd just completed the restoration of a 1960 Royal Enfield Constellation and I was looking for another project. I'd stumbled across this car by accident, but it looked interesting. It had already been imported into the UK, I thought privately but when I went to look at it, the guy had hundreds of cars on the premises. However, the claim that it didn't need any welding looked justified, and that was the big attraction for me.

It had already been stripped, but that didn't worry me. In fact, my problem is that I am a sucker for a basket case. If I see something that is just a

pile of bits in boxes, I can't help thinking that it was once a complete vehicle, and if it was built once in a factory, then I could rebuild it again. I asked if it was complete, and was told yes, but that some of the bits were stored elsewhere in boxes because the guy in the States had already started a restoration. That did at least mean I could satisfy myself as to its underlying condition. While it was not rotten, it had clearly been out in the sun for a long time because the paint was burnt off many of the panels which were now covered in surface rust, every single bit of rubber was so hard that you had to chip it off with a chisel, and the interior was largely nonexistent.



Richard Pollard had been looking for a TR6 motorbike when he stumbled across this car and decided this time to go for four wheels.

Even the engine was stripped to its component parts, and that made it something of a gamble because parts have a habit of going missing when cars are moved around in this state. However, we agreed a price with the proviso that if anything turned out to be missing when I got it home and unpacked the boxes, they would be replaced. Inevitably, when I got it home

I found lots of things were missing, including plenty of bigticket items such as carburettors and manifolds. I compiled a list, but of course the seller didn't want to know. What could I do? It was my word against his. In the end, this contributed to an over-spend on the project of around £5000, but fortunately the work coincided with an increase in TR6 prices generally



THE 'OTHER' TR6



Replacement dash turned out to be too thick for the switches and had to be modified slightly to suit.

which negated some of that. It was still something of a bitter pill to swallow, though.

The major issue with this project was having to do so many things twice – not having taken it apart makes it more difficult to reassemble in the correct order and the correct way. You do have to expect that when you buy a car in boxes, though. I bought it in November 2017, and it took me 18 months from start to finish. That wasn't working on it full-time, but I wasn't hanging about either.

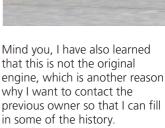
My goal was to create a car that was fairly standard, but I am not a rivet counter so it didn't have to be religiously taken back to original - I just like to see them looking nice and being used on the road. I could never keep a concours car looking good anyway because I am not a polisher. Having said that, any changes have been fairly minor – a high-torque starter motor for example, an Accuspark electronic ignition kit, high flow radiator core and things like that.

There were no shocks in the restoration. The body was on the chassis when I bought it and I never had to take that off, though of course I did check that it was good in all the places where they normally go. All I had to do was clean the chassis off, paint it black and then protect with wax. I did rebuild

the entire suspension too, and went through the mechanical side from end to end. Anything with a seal in it was replaced as a matter of course, and I was quite surprised at how everything was easily available.

The carburettors on it are now SUs because I got a secondhand set of those rather than the original Strombergs. The engine itself was pretty good once I got it cleaned out – the bores and bearings were all standard size and only needed cleaning up, which was quite impressive, especially since

there were 5000 miles on the clock which I assumed meant 105,000 miles. However, now I am not quite so sure because even after driving it for a while, there were still only 5000 miles showing - the speedometer works, but the mileometer does not! However, I did find a box inserted in the speedo drive that also had 5000 miles recorded. I couldn't figure out what this was and wondered if it was something to do with rallying, but eventually learned that it was a service recorder. I'd never seen anything like it before.

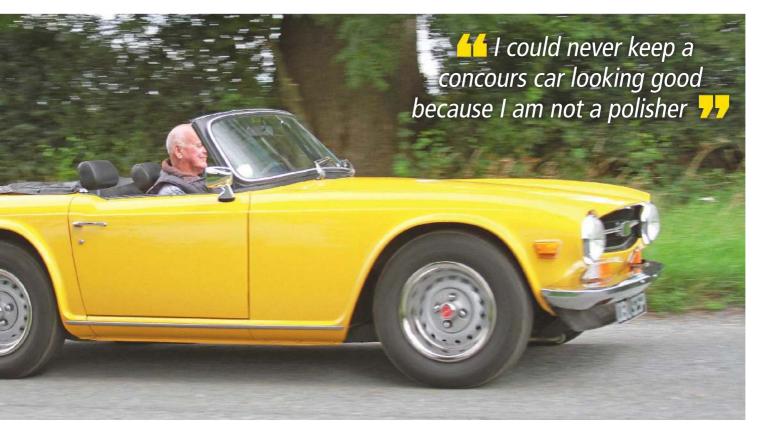


After the engine, I turned my attention to the gearbox. This part of the restoration did not start well because the input shaft would not turn. Initially I thought this was probably just because it had been standing,





Richard has fitted SU carburettors and left the engine in its softer and more tractable 125bhp state of tune.









but it turned out that all the layshaft needle roller bearings had seized. I suspect this might have been the reason why the car had been taken off the road in the first place and a restoration started. I priced everything up that I would need to rebuild the gearbox, and it was going to come to £500 for the parts alone. So when



Those exhausts are loud enough to wake the neighbours, but the noise does settle down when cruising.

I found a gearbox specialist in Lincoln who quoted me £350 to rebuild it, that was a no-brainer and he got the job.

I had to replace most of the interior, though the seat covers are actually the originals. The worst problem I had was with the dash. I'd got a brand new LHD dash, but found that the new wood was thicker than

the original and so the switches wouldn't fit. Fortunately, I have a friend who is a carpenter and he machined out recesses in the back of the wood. The dash had come from eBay and unfortunately that was a recurring theme with this project – when you buy things cheaply, you often end up buying them twice.

Another friend of mine was going to do the paint, but got so busy that although he did the engine bay so that I could crack on with that, the main painting was done by Barkston Refinishing in Grantham. They do a lot of concours cars, and did a great job on mine.

I have kept the original softer cam in the engine, so it

READERS' CARS THE 'OTHER' TR6

« is putting out about 125bhp. I also kept it as LHD. I spoke to several people about that at the beginning and asked whether I should convert it to RHD, but the consensus was that I'd be better off leaving it as it was because there would be a bigger potential market for LHD cars. It doesn't bother me at all that way, it is still great fun to drive and as long as you don't follow people too closely, then it is not even much of an issue when overtaking.

It is very different to the bikes, though. It may be a sports car, but it is slow, comfortable and casual compared to them. Having said that, it is a lot better than I had expected it to be. I thought it would have a lot of squeaks, rattles and bangs - I've restored some cars in the past and immediately wondered why I'd bothered! – but this one doesn't; instead it feels very solid and rides very nicely. I do find the steering is very positive, and with the smaller steering wheel fitted you only have to think of changing direction and

it is already there. Whether you call that positive or twitchy depends on whether you are a glass-half-full or a glass-halfempty kind of person.

Performance wise, it is of its era. Against modern cars with 2.5-litres there is no comparison, but then again how much power do you really need? As long as it will do 70mph comfortably, it doesn't matter. This one doesn't have overdrive, which would have been nice for longer trips but is not really necessary just for driving and enjoying locally. And the exhaust makes a lovely rasp. That's because during the rebuild I went down to TRGB for some parts and while I was there, happened to enquire whether they had any secondhand exhausts. They asked if I was bothered about it being a bit loud, and I said no. Apparently one of their customers had a twin system fitted to his car, then came back a month later and changed it for a standard system because it was too loud, so it was virtually



Richard decided to leave his TR6 in its original LHD configuration rather than changing it to RHD, and says this causes few issues on the road.

brand new and very cheap. I knew it was going to be loud, but I didn't realise it was going to be quite this loud. It can wake the neighbours, but they do say it sounds nice. At 2500-3000rpm it is at its noisiest, but it doesn't burst your eardrums and things do quieten down when you are cruising.

Now I just have new covers to get for the sun visors, but other than that it is pretty much finished. Oh yes, and it could do with some Leyland badges on the wings if you are picking at details. However, if somebody

came up to me and offered me the right kind of money, I would no doubt sell it as my enjoyment is in the restoration, or perhaps the resurrection would be a better description. Once that is done, I have a tendency to lose interest. If I do sell it, I will probably get another bike they are easier to work on, don't need much welding and you don't have so many parts lying around. That makes them much guicker to do as well, so this could be my very last car restoration. What a good job it was such a nice one.

44 I thought it would have a lot of squeaks, rattles and bangs, but this one doesn't; instead it feels very solid and rides very nicely ">>>





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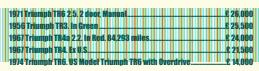
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PEDAL POWER



The title of 'Smallest Austin' does not belong to the original Austin 7 as many would think, but to the Junior pedal cars built in a special factory in Wales. STORY: CRAIG WATSON

he venue is Goodwood and the drivers are lined up for the Le Mans start. The cars were all built between 1949 and 1971. The flag drops, drivers rush to their cars and they're away. The race only last about 90 seconds, but the competition is furious. There is a fair bit of jostling for position and some exciting passing through the chicane, even though none of the drivers are older than 11 – this is the Settrington Cup and the cars are all Austin J40 pedal cars.

While the idea of Austin building pedal cars for children may seem of minor importance or even laughable, there was a very serious side to the enterprise. Not only were more than 30,000 built in a dedicated factory, but that factory played an important role in the overall Austin and BMC empires, and revealed a side of Leonard Lord rarely seen. In the dark days of the Second World War, when the coal industry was crucial to the war effort, serious concern was given to the number of miners succumbing to the insidious lung complaint Coalminers Pneumoconiosis - known to the miners simply as The Dust – a blocking of the lung tissue from inhaled coal dust. The more advanced form of the disease is called Complicated Pneumoconiosis – or Progressive Massive Fibrosis.

To indicate the seriousness of the problem, by 1945 some 5000 Welsh miners had been diagnosed. The British



A still from the company film on the Jubilee celebrations on 9th July 1955, showing children in a parade of J40 pedal cars prior to the race that was won by a young Alan Swadling.







Eight-year-old Marcia Ash (now Blake) at the wheel of the first prototype, Joy 1. Body assembly worker Alf Ash took measurements from Marcia and created a cardboard silhouette with moveable arms and legs to get the proportions correct for the pedal car.

government established a special department, the Ministry of Labour Rehabilitation Unit, to find alternative work for miners no longer able to do manual labour. Part of the scheme was for the government to subsidise the building of factories in those areas with the highest unemployment. These new plants would then be leased at attractive rates to encourage companies to bring new industries to the area.

While this scheme was in its

infancy, Leonard Lord, then Managing Director of Austin Motors, conceived the idea of making children's pedal cars and for the work to be done by disabled Welsh miners. Lord negotiated the lease of a factory built by the Welsh Estates Corporation in the Bargoed area of South Wales, about ten miles north of Cardiff, with a 50% reduction in the rates because it was planned to employ only disabled miners. Although almost universally referred to

as the Bargoed factory, the site was actually located at Pengam, a small village about a mile from Bargoed.

Meanwhile, Lord pushed forward at Longbridge to have a pedal car designed and ready for production once the factory had been secured. In April 1946, he seconded two workers from the Forward Planning Office (concerned with the development of the Longbridge factory after the war), Jim Blakie and Ron Phillips, to design the prototype pedal car.

According to David Whyley in his book Austin Pedal Cars: 'Jim and Ron were sent away for a think and were not sure how they were going to set about the project, having never seen a body drawing in their lives before.' To overcome this shortcoming, Alf Ash – who had worked in Body Assembly and in the Body Assembly Planning Office – was appointed as the third member of the team. They worked in a disused workshop in complete secrecy, not even

being allowed to tell their families about their work.

The brief from Lord was that the pedal car had to be effectively 'like dad's car,' but in miniature. It had to have opening boot and bonnet, a dummy engine, proper seat upholstery, plus working lights and horn. After looking at some pedal cars already on the market, the team was so unimpressed that they decided to ignore anything from competitors and work from a clean sheet of paper.

The car was to be suited to children from the ages of five to nine, and Alf Ash was the only member of the team with a child the right age. He measured his daughter Marcia and made a cardboard scale figure with moveable joints, which was used to get the size of the car, the position of the pedals and clearance for the knees as they came up and down.

The pedal car had to be a reflection of a current model, and the front was originally





To give a degree of realism under the bonnet, the 'engine' featured faulty spark plugs supplied free of charge from Champion, and a rocker cover complete with cork gasket.



With its body pressed in two halves for simple assembly, the Joy 3 prototype (based on the prewar Austin 7 OHC race cars) was put into production as the Austin Pathfinder before the J40.

then Austin 8/10/12 family, with headlights mounted in separate pods and a fairly tall slatted grille. The first prototype, built by Longbridge panel beaters Bill Avery and Jack Turton, used a bicycle-type chain drive and was completed in June 1946 - fewer than three months after work began. It was Lord himself who came up with the name for the car, which went onto the dummy number plate, calling it Joy 1 because it was 'going to give joy to one or two kids.'

A second prototype, Joy II, followed soon afterwards, which was more suitable for production. A backwards/ forwards treadle motion for the pedals replaced the cycletype on Joy I, and the car was considerably lighter.

A third prototype, Joy III, was Jim Blaikie's design, based on the pre-war twin-cam Austin 7 race cars but drawn completely from memory. This was completed in March 1947. A very different car in appearance, it had the advantage for production of being easier to build, with the body simply being pressed in two halves. At this time the group started calling themselves The Joy Car Department.

In order for the design of the pedal car to be contemporary, a fourth prototype, Joy IV, was built, with the front styled on the then still secret A40 Devon, which itself was only in the prototype stage. By this time the Pengam factory was coming together, with presses no longer required at Longbridge



Joy 4 was based on the then still secret Austin A40 and went into production as the J40. Note that J stood for Junior, not for Joy.

being transferred over and new tools made for the pedal cars. Because the factory was to be staffed by disabled miners, other companies got behind the project. Jim Blaikie approached Lucas and Dunlop to supply electric components and tyres at very reasonable rates, Champion donated faulty spark plugs to give an element of realism to the dummy engines, while Clifford Coverings, which had the contract for the A40 Devon steering wheels, provided the steering wheels for the pedal cars too.

The factory officially opened on 5th July 1949, with the Pathfinder Special – based on Joy III and named by George Harriman. Production of J40 pedal cars, derived from Joy IV, began later in the same year, with the first recorded sale in October. The 40 in the name came from the A40 on which



Completed Pathfinders, minus wheels, lined up and ready for shipment. The Pathfinder went into production first because of its simplified production, and ceased production around the end of 1949 with only about 1500 having been made.





Clean up at the factory commenced only two days after the explosion and production was back underway, in a limited capacity, within the week.



Bill Aitkin, owner of the red J40 in our pictures, is an Austin enthusiast who also owns a full-sized A90.



the pedal car was styled, but the J stood for Junior, not Joy as on the prototype.

The delay in J40 production was due to its more complicated nature over the Pathfinder for production. In total, some 112 pressings were required for the J40 pedal car. Of these, 108 were pressed at Pengam, while the remaining four – all large body panels – were pressed at Longbridge.

The sign over the front of the factory proudly proclaimed it as the Austin Junior Car Factory. The factory also boasted a fulltime doctor and nursing sister, who monitored the health of the workforce and assigned the former miners to jobs within the factory according to their level of disability. Apart from a few in management and trainers from Longbridge, the factory was considered unique in the world at the time for having a workforce that was 100% disabled – 60% of whom suffered from Complicated Pneumoconiosis.

An important aspect of the factory was that, as much as



possible, it was to operate like a full-size car factory. The same processes for stamping panels, welding bodies together, painting and final assembly were to be followed. To tie in with this, Carrier Engineering donated a scaled-down version of its patented Rotodip pretreatment plant, which would serve as a test bed for the system prior to full-size Rotodips being installed at Fisher & Ludlow in Castle Bromwich, Austin at Longbridge and, later, other BMC factories. The fact that every Austin Junior pedal car until 1962 went through the Rotodip has helped in preserving many over the years.

Operating as a scaled-down

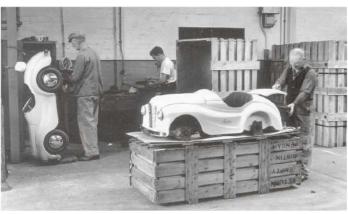
car factory had a number of advantages beyond the obvious. Up-and-coming executives from Austin, and later from BMC, were sent to Pengam, usually on a tenure of two years, to learn about running a car factory, before returning with promotion to Longbridge or other plants within the Austin/ BMC empire. Most notable of these was Harold Musgrove, who ran the Pengam factory from 1954 to 1956 and later went on to be Managing Director of the Rover Group.

As with full-size cars, each pedal car had a chassis number.

On the Pathfinder it was stamped into the seat support under the seat cushion, while on the J40 it was stamped into the boot floor near the catch for the lock. It is not known exactly when Pathfinder production finished or when J40 production began, as records only go back to 1955 according to Whyley. However, he quotes Dr Stewart (presumably a medical officer at the Pengam factory), that up to the end of 1949 some 3155 Pathfinders and 1454 J40s were built. It is believed that Pathfinder production ceased around this



The layout of the dash on Joy 1. This photo was apparently taken many years later, judging by the condition of the vehicle. The painted speedo needle sits at just under 60mph (which would have taken some peddling) and the plaque states that the car was built by disabled men. The prototype was built at Longbridge, but it may have been an early thought that the production cars would have a similar plaque fitted, which they did not.



The final checking station, where cars were crated up for shipping. Wheels were detached and placed in the boot. The note on the side of the crate reads: "Return Empty Austin Pengam" - although the factory is usually referred to as being at Bargoed, including in many news reports of the time, the factory itself, particularly in the early days, referred to itself as being in Pengam.

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time, with the highest chassis number recorded by Whyley being 3678. The J40 continued on as the sole product from the factory for the time being.

The first J40 chassis number listed for 1955 is 16001, which suggests an annual production of around 3200 units. This ties in with the first year's figures according to Dr Stewart, but is quite a lot more than later figures show, and it is unlikely that chassis numbers began at 001. It was normal practice in Austin at the time to start production at chassis 101, and it is very possible that this was the case with the pedal cars as well. The last recorded chassis number is 32,098.

Although the factory opened with about 110 workers, in 1953 this increased to around 150 and kept growing to peak at 514 in 1965. The reason for the increase in the workforce was that a growing number of small components were made



at Pengam for the Longbridge production lines. These included seating for commercial and CKD vehicles, fan blades, Mini Pickup tilt covers, battery straps, plus timing and rocker covers for A and B-series engines. Meanwhile, J40 production remained steady at around 1110-1200 per year from 1955, peaking at 1353 in 1959.

Then at 10pm on Thursday, 11th January 1962 disaster struck – there was a massive explosion at the factory, apparently caused by leaking gas in the paint shop, which blew off half the roof and destroyed the Rotodip. Fourteen workers were injured, six seriously – of whom four were still in hospital at the end of the month, according to the *South Wales Echo* newspaper.

A small number of workers were back cleaning up the factory within two days, and production got under way again within a week after a

partition had been erected to close off the damaged area. However, because the gas had been switched off until repairs were carried out, the factory was to be a very cold place to work for some time. As full-size Rotodips were installed in most BMC factories by this time and there was no longer the need for a scaled down version to test the process, what was left of the Rotodip at Pengam was dismantled and not replaced.

From 1962 onwards J40 production steadily declined about 10% per year, apart from a slight improvement in 1969. However, only 268 were built in 1971, with production ceasing on 15th September. Throughout this time, though, production of small parts for the main factories increased, and continued until the Pengam factory finally closed on 30th May 1999. By then the workforce had shrunk to a mere 44 employees, with their main output being rocker and timing covers for the A-series engine.

The South Wales Echo gave a very brief announcement of the closure, stating: 'Rover car parts plant at Bargoed in the Rhymney Valley was closing its gates for the last time today. Despite a battle to save the plant – set up in 1949 – and its 44 jobs after closure plans were announced in January, Rover announced last month it would close for strategic reasons. It said it would not be producing in-house small components of the type manufactured at Bargoed in future and added the decision did not reflect the quality of the workforce.'

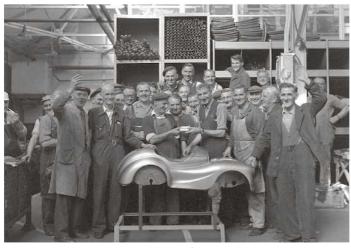




Although it is not clear if the remaining workers were sufferers of Pneumoconiosis, the last sentence suggests that they may have been in some way disabled, though this is not confirmed.

The J40 had been arguably the best pedal car on the market in its time, built from automotive grade steel, painted in the same manner as full-size cars, with working lights and horn, opening boot and bonnet, a dummy engine, working hand brake, pneumatic tyres and fully-trimmed seat. J40s were sold in many countries, through Austin and later Leyland dealerships. Although initially priced at £20 (which equated to about the same as three weeks' average wages at the time), the J40 was very popular, particularly in North America. It was soon found that many were being bought for use on fairground rides, such as merry-go-rounds or coin-in-slot rides, where they were stripped of their pedal mechanism. To cater for this market, some examples were built without the mechanism, though it is not known how many. They also proved popular with children's traffic schools, to teach road safety from a very young age in at least the UK, Canada and some European countries, and were often seen in circuses as clown's cars.

At the Austin Jubilee event on 9th July 1955, a special race was held for 20 of the J40 pedal cars, driven by children of Austin employees. The race was won by Alan Swadling, who was awarded a brand new



The trim shop at Pengam made seats for many Austin/BMC vehicles, particularly for those exported CKD and for commercial vehicles.

J40 as his prize – though not the one he drove, as is often reported. Such races became popular at various race meetings and charity events, and the J40 is now becoming popular again, thanks in no small part to the Settrington Cup at Goodwood.

The Austin J40 Pedal Car Club was formed in 1983 and continues to promote the pedal cars at various events, including Goodwood Revival. The longserving president of the club is Marcia Blake - none other than Alf Ash's daughter, who drove the Joy I prototype for the photographer back in 1949.





Although numbers are not known, coin-in-slot rides were a popular use for J40s without pedals during the 1950s.

The Feature Car

According to his wife Judy, Bill Aitkin is Austin mad! His parents had an A70 that Bill learned to drive in, and his own first car was an A90. He's always had an Austin of some sort and currently owns an A90, an Austin-Healey 3000 and an A70 pick-up that he bought sight-unseen from Tasmania and completely restored.

In the mid-1990s he learned about the J40 and decided



Two of Bill's grandchildren investigate the J40 after its arrival from Queensland. They didn't even wait for him to put the seat cushions in.



Life-long Austin enthusiast Bill Aitken is chuffed with his J40, which had been on a merry-go-round and therefore had no pedals.

he should have one. After all, it is an Austin! He missed out on one at auction in Melbourne, then heard about a chap in Brisbane with three. Bill and Judy were driving to Toowoomba for Austins Over Australia in 1997, so added a little side trip to Brisbane to see the pedal cars. 'He told us this one was a merry-go-round car, so it didn't have the pedals and things in it. I'd heard we could get the bits, so I decided to buy it anyway,' said Bill.

'We were thinking about bringing it home with us, but he said there's no way it would fit in the car, and he was right. So he sent it over in a box. The grandkids were here when it was opened, but they couldn't drive it because it had no pedals – and it still hasn't. When I worked out what stuff

we needed to make it into a pedal car, I rang Roy Halford in England and I asked him to send over whatever I need to make it a pedal car. I got most of the bits, but there are a few more I need and I haven't got around to fitting them yet.'

Bill said that although the J40 was basically as it is seen here, there was some other work needed to it. 'The wheels were all over the place, so I put an adjustable tie-rod in it. I re-bushed all the bits too, but they've got proper roller bearings in the wheels. They were very well made.'

Bill and Judy take the J40 to many car shows and display it in the back of their A70 pick-up. They're not going to sell it, and with their grandchildren pretty well grown up, maybe Bill will have it going for their kids.

ACKNOWLEDGEMENTS

Some of the photos in this feature were taken at the factory by Reg Rogers, a former miner who worked as a welder at the Pengam factory. He was also an avid photographer, taking more than 600 photographs around the factory and winning local awards for his work. His photos are the only known detailed record of the explosion at the factory on 11th January, 1962. Reg's photos are kindly reproduced with the permission of his son Billy, who inherited his father's negatives.

Information for this feature has come from a number of sources, which we wish to acknowledge here.

David Whyley's small book Austin Pedal Cars (1999, Arthur Southern Ltd) is a detailed and well-researched history of the Pengam factory and the Austin pedal cars. The book is out of print now, but copies do turn up from time to time.

Austin celebrated its 50th anniversary in 1955 and a race for J40s was included at the jubilee celebrations at Longbridge. An excellent film was made of the event, which includes the race. In 1957 British Pathe produced a film for BMC titled *They Work* Again, which takes a detailed look at the factory, the workforce and the disease Pneumoconiosis. Both these films are included in

the DVD The Best Of Austin in the Fifties which is available from the British Motor Museum, Gaydon.

The South Wales Echo newspaper was a good source of information regarding the explosion in 1962. Thanks go to Katrina Coopey at Cardiff Central Library for her assistance in tracking that information down.

A search on Youtube will reveal numerous videos for the Settrington Cup, first run in 2012. Also on YouTube you will find some excellent videos on the J40 pedal cars. In particular, check out the short film about a driving training school in the US narrated by James Stewart, it would seem! Interestingly, he calls the car the Phoenix Link Trainer. They are definitely J40s, though. There are also a couple of good websites for information, www. austinmemories.com and www.austinj40pedalcarclub.org. **uk** (which of course is the site for the club in the UK).

If you have an Austin pedal car that needs work, Roy Halford in the UK (www.j40.co.uk) sells many parts, including some reproductions, although he is now in semi-retirement. Last but not least, Chris Knight at CK Auto provides trim kits for the seats - see his full range at www.ckautotrimkits.com

BOB'S BOB

(BATTERY OPERATED BEETLE)

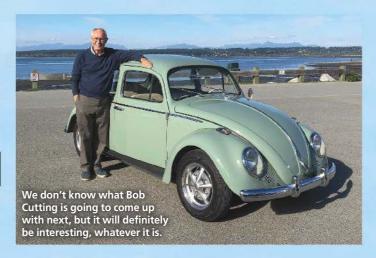
lain Ayre has some electrifying fun with a home-converted Beetle.

ighway 99 runs from Vancouver BC down to the US border, and then as Interstate Highway 5 it cruises all the way down to San Diego and Mexico. Ambling down 99 towards Bob Cutting's house in White Rock BC, I was curious to find out how he had tackled converting a 1963 Beetle to electric power.

I've driven an electric Smart and... meh. The whole concept of electric cars seems to me to be a temporary side issue on the way to hydrogen cells, and I expect Priuses to end up as valuable and relevant as

compact discs. The low cost of automotive electricity is a temporary mirage as well. It may well currently (as it were) cost Bob \$2 to fill the electric tank on his lecky Beetle, but that means the government is losing the \$20 they would have taxed him for filling up with petrol. How much longer do we think governments are going to tolerate losing tax income at that level? Placez vos bets, messieurs-dames.

However, I've written about one of Bob's cars before, a back-dated late MG BGT with a steel dashboard that was



beautifully executed. Bob has also built aircraft in the past, so I was expecting elegant and creative engineering. What I definitely did not expect was for this electric car to be an absolute hoot to drive. The reasons for that were the torque and the gearbox, which Bob has retained. He also kept the clutch, although its use is entirely optional.

The electric motor has directly replaced the flat four fossil engine, and is bolted to the standard (albeit slightly uprated) Beetle four-speed manual gearbox. The new motor is

an HPEVS (High Performance Electric Vehicle Systems) AC 50 unit, designed for use in automotive applications with a kerb weight of 3500lbs or less. It produces 71hp and 120lb.ft of torque. The red line is 8000rpm, so there's no need for a fifth gear, or for that matter any extra gears at all apart from reverse – production electric cars can change the motor's polarity and just run it backwards, but that requires expensive electrickery unavailable cheaply to amateurs.

There are other reasons too why Bob has retained the Beetle



The shell was blasted back to bare metal and repainted throughout. The interior colours are quiet and quietly complementary.

44 The red line is 8000rpm, so there's no need for a fifth gear – or any gears other than reverse **77**



Quite serious performance reveals the inadequacy of the soft seats, which have no side bolsters or thigh support – not a problem with 34bhp, but the grab handle on the dash now comes in handy.

gearbox. For one thing he'd need a transaxle anyway, and changing it rather than just bolting the motor to the existing box would have been pointlessly complex. Also, while you can move off in any gear, moving off in a high gear requires more torque and wastes energy. When Bob booted it up a steep hill in top gear, it accelerated

but used a lot of energy, was noisier and felt like it was bogging. Change down and it felt happier and faster, just as it would on a bike.

Conceptually BOB is slightly odd to drive. The clutch is used for changing gear, but as I said, changing gear is optional. The clutch is not required for taking off: if the car is in a gear, just pressing the throttle pedal makes it move. With the motor revving to 8000, this gives a theoretical top speed of well over 130mph in top with a Beetlish 4:1 diff ratio. So you could pick a gear, say 2nd or 3rd, and just leave the car in that gear. It would be quite happy to drive all day in 2nd for town and 3rd in the country.

With the car in a gear, you just turn the key, push the Prius-sourced and very sensitive Hall-effect throttle pedal and the power goes to the wheels. Come off the throttle and the





Bob took some pleasure in deleting the cutouts on the rear valance for the missing and now redundant exhaust pipes.

motor and car just come to a stop. As mentioned earlier, you can involve the gearbox to save energy and make power delivery more efficient. If you are cruising in top, you can floor the throttle and the car will still accelerate strongly, even up a steep hill, but if you gear it down by changing to second, the geared-down power is much more efficiently applied and the car will either use less torque and less stored electricity to achieve the same speed up a hill – or if you boot it, it will take off like a bloody rocket up the same hill. Bob has actually turned the available power down a bit rather than risk breaking something. He has also used quite a low 4.12:1 final drive ratio in the differential, which either lowers the torque stress on the drivetrain or gets more acceleration, depending on his mood.

Even with the wick turned down a bit, the torque feels like a decent small-block V8 in



Eight-inch electric motor is bolted to the VW gearbox, retaining the clutch. Forward of that, it's all standard VW.

a full-sized car and gives you a proper hard shove into the back of the seat. One of my first thoughts was that this amount of power is going to break either the gearbox or the diff fairly soon. My second thought was that the suspension and handling of 1963 Beetles is nowhere near up to the amount of power available here. However, the brakes actually are fit for purpose - Bob has replaced the elderly drum system with discs all round and the rear brakes are helped out by regenerative battery back-charging and thus give some gentle engine retardation through the driveshafts,



On the left of the motor is the standard plug-in charging socket.



THE BUILD



Blasting the shell airborne from a gantry. It was in pretty good shape, which was helpful.



New rear wings and a new rear valance panel were fitted, but the exhaust cutouts were obviously no longer required and consequently were deleted.



Bob primed the shell himself before taking it to Maaco for a budget paint job, though thanks to the detailed prep there is nothing budget about the finish.



The rear set of batteries occupies the luggage space behind the rear seats. Luggage space is now only the back seat and floor, plus a small space in the front boot.



The motor is bolted to the VW gearbox with a bell housing and a conventional clutch.





ABOVE (LEFT TO RIGHT): The DC to DC converter reduces voltage for the 12-volt car wiring loom which has been retained for lighting and other minor duties. The plastic non-conductive contactor box contains components that transfer power from the batteries to the motor controller.

although the extra braking is not enough to risk the back wheels locking up.

Raw power numbers don't really translate very well, as electric power gives maximum torque grunt from stationary, while an internal combustion engine has to wind up to a few thousand RPM before major power is produced. And in any case, power means nothing on its own: trains and tractors are powerful, but they're hardly nippy. Torque-to-weight is the critical number for practical roadgoing muscle. Bob has

used five Tesla battery packs to power a Beetle weighing 1800lbs – the electric setup weighs about the same as the original aluminium flat four and the fuel tank. The standard Tesla weighs 5000lbs and uses 16 battery packs, so the Beetle isn't as fast as a Tesla, but it is probably not far off it. You can't buy the Tesla battery packs new, but secondhand they're about \$1250 Canadian each, which is about £750. They last 5000 cycles, so with a charge every few days that means a decade or so.



Bob doesn't want any external clues on this car, partly because it blows off Porsches and Mustangs no bother, but a little lightning sign might show up on the badge in the fullness of time.



The battery packs are divided between the front boot and the space behind the back seat. Bob fabricated all the containers.

Bob is probably going to get rid of his Prius, as the Beetle does the same job more efficiently and is infinitely more fun. Its range, driving reasonably in reasonable BC temperatures, is about 100 miles, so that means 50 miles outbound. For nearly all local trips, that's fine. He can drive to central Vancouver, the airport, quick trips across the nearby US border for cheap gasoline... which of course he no longer

has to do. He has a 1954 MG TF as well for longer trips.

Hooligan driving and cold air temperatures both reduce the range substantially, but fine tuning is available. The option exists to plumb the Tesla batteries with pumped hot water to keep their power and range up, which costs less energy than is lost by the batteries getting too cold. The batteries can also optionally be pumped with circulating

coolant to stop them blowing up from getting too hot: the Tesla system shuts the car down before that happens.

> Oddly enough, this particular Beetle has been electric for years. It came to Bob with University of British Columbia graphics on the doors, and white sneaker-marker dragstrip notations on the back window. That's because it was raced at the Mission dragstrip with lead acid batteries many years back by UBC's engineering department, although Bob bought it as an empty shell, which is what he advertised for on the forum of the Vancouver Electric Vehicle Association.

The car was stripped to the bare shell and blasted, then Bob cut the rust out and welded in a new valance, enthusiastically deleting the cutouts provided in the valance for the exhaust pipes. He then did the paint prep himself. The car was painted by MAACO. This will horrify North American readers, as MAACO specialises in cheap blow-overs of shabby shoppers for a couple of grand. However, a good paint job is nearly all in the prep. MAACO uses quality paint, and its painters just lay paint on all day, every day, so if your prep is up to scratch, you're getting good top coats skilfully applied for a good price.

When it comes to the rest of us having a go at electrifying



essentially the fuel gauge and selectively displays battery voltage. charge and discharge current, consumed amp hours, remaining battery capacity and time remaining.

a classic, Bob says don't try this at home until you have done enough research to know what you are doing. Bob is an engineer, qualified to inspect aircraft and sign them off as airworthy, so he knows a lot about a lot of mechanical and electrical systems, and he knows where not to poke a screwdriver. There are some very big sparks in these components, and I still have a watch strap burn scar from a 12-volt 30-amp Mini battery, whereas this setup is 125 volts at 650 amps.

The cost of this project has

been 1000 hours of time over about 11 months, much of which was concerned with the electronics, which Bob says were challenging. The cash total was around £13,500. That is actually very reasonable considering the Beetle has been very nicely restored as well as being converted to electric power. Bob reckons he has spent around £11,000 just on the electric side of the conversion, which is quite a bargain when you see classics using the same running gear offered for £100k or more.

If you were quick, you might still make some savings for a few years from an electric conversion, before charging electric cars becomes expensive. It was the same government types who encouraged us all to drive diesels, so who knows what similar top decisions CM they're brewing up next.

This car will be cruising and hurtling into a long life, so

future generations will know who built it.

Bob would like to thank his endlessly patient wife Annabelle, and EV West.

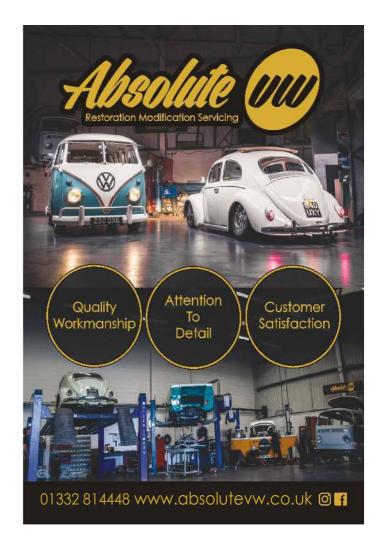
SPECIFICATION

Motor: High Performance **Electric Vehicle Systems** (HPEVS) AC50, 8in, 75bhp/150lb.ft **Electronics**: Curtis Electronics 1238 Controller; Elcon 2500 onboard charger; Elcon 500 DC/ DC convertor; Dilithium Design Systems battery management system; five Tesla Model S battery











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DID YOU KNOW...? TOP TEN TRIVIA: REGISTRATION NUMBERS



e have got something a little different for you this issue with our Top Ten Trivia slot, because instead of looking at a particular classic model, we are focusing our attention on registration numbers. And yes, we realise that registration numbers might not sound the most exciting of subjects, but bear with us because it was inspired by a new book on the subject from John Harrison which we found surprisingly addictive.

As well as providing a comprehensive overview of how the UK system was introduced and developed through to the present day, John's book also answers no end of questions that might puzzle the classic owner. Why, for example, did some classic cars receive A-plate numbers when they were re-registered but others get agerelated plates? How come so many MGs were given an appropriate MG number? And, of course, what is the rudest number that has been released onto our roads?

While the chapters on age-related reregistrations, registering imported cars and buying personal plates have the most direct relevance to classic owners, the book is also a fascinating history lesson and a useful reference for identifying and decoding numbers. There is information in there on trade and diplomatic plates too, as well as military numbers. It is highly recommended,

and the following trivia will hopefully help to show that even registration numbers can be interesting and entertaining too!

Under the provisions of the Motor Car Act 1903, any motor vehicle used on public roads after 1st January 1904 had to be registered. Britain was comparatively late in introducing vehicle registration because it was thought the requirement to display a registration infringed civil liberties and was opposed by the civil liberty lobby. Although Britain was late to the party, (Baden in Germany issued their first number in 1896 and the Netherlands introduced the first national system in 1899,) it now has the oldest national system in the world under which a number issued at the outset can still be legally used on the same vehicle.

2 It is often stated that the London number A 1 was the first British registration to be issued, but this is not the case. As far as we can tell from surviving records, it would seem that the first number issued was DY 1 on 23rd November 1903 by Hastings, whereas A 1 was not issued until 7th December 1903. Also, it is sometimes stated that Earl Russell who had A 1 queued all night to obtain the number, but there does not seem to be any contemporary record of this, so the story might well be an urban myth.

3 So why did Hastings issue DY and London get A? The Local Government Board who were responsible for bringing the registration legislation into effect allotted one- or twoletter codes to local authorities in England and Wales in 1903. They allocated the letters in alphabetical order by population size, with A going to London as the largest authority. When they got to Y for Somerset (Z was reserved for Ireland and codes with G, S and V in them were reserved for Scotland), they moved on to AA for Hampshire and ran through to FP which went to Rutland, the smallest authority by population size. Wales was not given any special recognition in this allocation. The separate Local Government Boards for Scotland and Ireland issued their codes using the authorities' names in alphabetical order, not by population size.

4When codes were originally allotted to local authorities, two objected to the letters they had been given – Dorset which had BF (which stood for 'bloody fool' at the time) and Northampton which had DF (which stood for 'damned fool'). Their protests were accepted, and replacement codes FX and NH respectively were allotted instead. In 1924, when Gloucestershire needed a second code, it was given DF and did not object. BF was used again by Staffordshire in the 1960s (but only as part

TOP TEN TRIVIA: REGISTRATION NUMBERS

of a three-letter combination), and more recently it has been used for pre-1930 age related re-registrations.

5 Although having a personal registration number was once the preserve of celebrities who had the money and the ego to indulge their fancies, nowadays it is not unusual for people to buy the right to display one that relates to them. Being easily recognised can have its drawbacks, however. The first celebrity to have a personal plate is thought to have been the famous music hall comedian Harry Tate, who had car number T 8. In 1935, Harry's car was followed by two journalists who recognised the number plate. They realised he was driving erratically and signalled a police patrol car. Mr Tate was charged with drunk driving and dangerous driving. He was acquitted on the first charge, but fined £12 12s for driving dangerously.

DVLA does not only issue registrations 6 WILA does not only 1336. 23. With the current age identifier, because a lot of vehicles have to be given 'new old' numbers when, for example, personal plates are transferred off them or they are imported secondhand. As a result, there have to be previously unissued numbers available for vehicles of any age so, for example, if somebody imports a 1965 car it can receive a C-suffix mark. There is even a series reserved for veteran vehicles made up to 1904. This is BS 8001 to BS 8999 – an Orkney number, but Orkney only issued up to BS 7938. The remaining Orkney numbers (from BS 9001 to BS 9999) have been used for 1905-1930 vehicles.

7 The QQ 1000-9999 range is unusual in that numbers may have been issued more than once. That's because, from 1921, the code QQ was allocated for temporary registrations of vehicles from countries that had not signed the 1909 International Convention on Motor Traffic, or whose number plates did not use Roman letters. They were only valid for a year, so there was no chance, for example, of QQ 2043 appearing on two vehicles simultaneously because it was first issued in the 1930s, then again in the 1960s.

Only one person is allowed not to have to have number plates on their car – the monarch. However, between them members of the royal family have had a number of distinctive registrations. AMP 1P was specially issued out of sequence for the marriage of Princess Anne and Captain Mark Phillips for example, while Princess Margaret used to have PM 6450, the number reputedly indicating the date when she met Group Captain Peter Townsend.

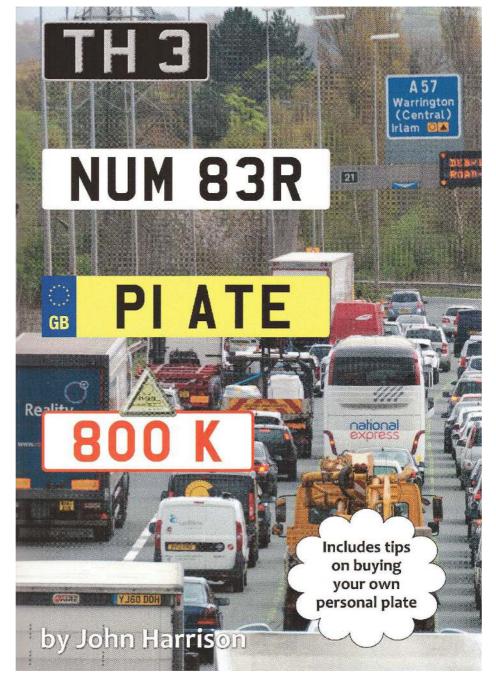
9 Certain letter combinations have been withheld to cover! withheld to save the nation's sensibilities. Ones considered potentially offensive have

included APE, GOD, JEW, LAV and SOD, plus DUW (which is Welsh for God) and BAS (Gaelic for death). Great Yarmouth's EX obviously has potential, and perhaps surprisingly SEX 1E has been sold by the DVLA at auction. The rudest currently in circulation are probably FU 2 and PEN 15.

Military vehicles did not initially have Uspecial registration numbers, but from 1921 Royal Air Force vehicles had RAF *** numbers and Royal Navy ones were given registrations in RN *** format, while Army vehicles had Middlesex civilian registrations. Between the wars, a range of the army's allocated numbers were reserved for armoured vehicles, and unusually these were reissued for civilian vehicles after WW2. From 1949 a new style for all armed service vehicles was introduced that followed the format 12 AB 34. Under this system, the letters CV were used to indicate a captured vehicle - this was used on captured Argentinian vehicles after the Falklands War, and at least one Iraqi tank received a similar mark after the Gulf War.

The Number Plate Book **By John Harrison** Paperback, 151 pages, 170mm x 243mm. ISBN: 978-0-904775-31-0 **Published by Newby Books** Price: £7.95

John Harrison is the editor of a quarterly newsletter which covers all aspects of vehicle registrations, called 1903 and All That. Subscription details for the newsletter can be obtained by contacting John via email on john@theharrisonfamily.org.uk





PART 3: FRONT SUSPENSION OVERHAUL

Work begins on our 1967 two-door Morris Minor 1000 saloon as we strip down the front suspension to replace some missing components and upgrade a few others.

REPORT: SIMON GOLDSWORTHY

ast issue we asked Morris Minor expert Russ Smith to cast his eyes over our new purchase, helping us to compile a list of jobs to be done. He picked up a number of small items that we can choose whether or not to fix, but also a couple of more serious things that definitely need our attention.

The most important of these was that the front suspension was missing its bump stops. This should be an MoT fail, but only if the tester knows what should be there – it is far easier to spot something that is present and defective than it is to know when something is missing entirely. Not that our Minor had been put through a ministry test since 2017, because when that one expired it was declared as MoT exempt.

I shall be booking a test before putting the Minor into regular use, but it makes sense to sort out any known faults beforehand, otherwise you are really wasting everybody's time. And for me this means starting with those bump stops. That in itself would have been a simple task, but these things have a way of snowballing. In this case, Russ had also pointed out that the torsion bar lever on the driver's side was missing its adjuster plate where it attaches to the crossmember. This plate also adds strength to the mounting point, so its fitment is not optional.

The good news is that this adjuster plate only costs a pound or



two to buy, but the bad news is that you have to dismantle the suspension on that side to fit it. On a Minor this is not a terribly difficult task, (although of course any job gets difficult when you are trying to dismantle parts that have not been touched for many years,) you just need to separate the two halves of the front wishbone, support the rear half, remove this from the bottom trunnion and then lower it down to take the tension off the spring. Sounds simple if you say it quickly enough, but since we could see that some of the suspension bushes looked past their sell-by date, it made sense to replace these at the same time. That in turn meant I had to dismantle the suspension on both sides. I then opted to fit improved polyurethane bushes all round. As Russ said, the rubber bushes were pretty rubbish in 1967, and they are generally even worse today.



A little tip that is well worth heeding – when you need to take the wheel off a new purchase for some servicing in the garage, always try the wheelbrace and jack that are in the boot. That way you'll know if they will be of any use if you should ever be stranded by the roadside with a puncture. As it turned out, the wheelbrace in the Minor had barely enough leverage to shift the wheel nuts.



2 Also, when you have a wheel off, take the opportunity to examine it carefully on both sides looking for any damage, but also for the date mark – the Minor was wearing quality and virtually unworn Bridgestone rubber all round. At the time Simon was delighted, but now he suspects they may have been made in 2011.



The steering joints were utterly caked in grease and muck – it is nice that somebody has been enthusiastic with the grease gun, but there is no way you can use the nipples in this condition without risking the introduction of some grit in with the fresh grease. The mess also makes it impossible to properly assess the condition of any rubber boots.



4Cleaning off the accumulated grease and muck with degreaser and plenty of rags showed that the trackrod end boot looks to be fine.



5There was not such good news elsewhere as the bush on the top trunnion looks to be time-expired. The cracks in the collar that you can see are not necessarily the problem, though they do suggest it has been in there a while. The bigger issue is that the pin does not sit centrally, meaning that the bush inside the trunnion is seriously worn.



6 Before cracking on with dismantling though, we wanted to fit the bump stops whose absence had started us on this line of work. On the offside there was only one hole visible for mounting the upper bump stop and we couldn't see where the other hole had been plated over, which made positioning it something of a gamble.



7 So we paid a visit to a Minor-owning couple we knew in town and asked if we could have a look in their wheelarch. From that we could see that while the rear mounting bolt goes through the inner wing and into the engine bay, there should be a lip that protrudes slightly into the wheelarch and the second bolts mounts to this.



Our inner wing was missing this protrusion. However, we positioned the bump stop using the one remaining bolt hole, then jacked up the wheel to see what our options were for the second hole. (It is surprising how much the kingpin moves in an arc, so you want to get it as close to its upper travel limit as you can.)



Prom this we figured there was just enough room to drill up from below, entering the engine bay behind this reinforcing flitch panel. It was awkward but not impossible to get the bolt in and stop it from turning while the nut was being tightened up, but at least it is not something we will have to do too often.



10 The lower (rebound) stop was also missing, but there was no problem with seeing where this needed to go – there should be a rubber pad bonded to the top of this angled bracket bolted to the inner wing at the bottom of the slot through which the damper arm (which doubles up as the top suspension arm) protrudes.



1 1 Rather than trying to bond new rubber onto the old and rusty bracket, complete new replacements are only £5.95, so we got two of those. With the suspension raised so that the damper arm was lifted out of the way, fitting them was simple, although they were a very tight fit over the flange in the inner wing slot.



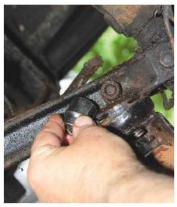
12On the nearside, the top bump stop mounting hole had been plated over from underneath, but we could see its location when viewed from above in the engine bay. It was a bit of a squeeze behind the wiper motor, but we were able to get a small cordless drill in there and drill down through the plate.



13 Curiously, the plating on this side had extended this section of the inner wing correctly, giving extra width to the flange in this area so that the front bolt (the one on the left in this shot) could be secured entirely in the wheelarch without extending into the engine bay. The other bolt should really be changed for a shorter one.



14 It was now time to start on the suspension proper. Never having done this job before, we were following the workshop manual. As we shall see next issue, this did lead us astray at one point, but not disastrously. We started on the offside by jacking up the rear wishbone to take the spring tension and removing the wishbone tie bar.



15The wishbone fork to which the tie bar connects is one of four points at which the two wishbone halves are joined together, so it has to be removed. Unfortunately the nut securing it was buried deep in the rear wishbone, and there was not enough space to get our chunky 3/8W socket onto it.



16 Fortunately a slimmer 11/16AF six point socket was a snug fit with a tap or two from a copper hammer, and that did the trick. We shall replace the nuts anyway – they are a special design with a round section that holds the hex head away from the arm itself and makes it easier to access.



17 With the fork removed along with an additional bolt that tied the front and rear wishbone arms together, we could undo the nuts securing each end of the front wishbone arm to the fulcrum pins – one through the eye bolt at the inboard end and the other through the lower trunnion – and remove the front wishbone arm.



18 We could now see just how badly worn the bush was in the eyebolt, which secures the inner ends of the lower wishbone arms to the chassis rail. Clearly the front suspension would have needed dismantling on both sides, whether or not the torsion bar adjuster plate had been left off.



1 9 First though, we had to return to the outer end of the wishbone arm and undo the nut securing it to the rearward facing end of the trunnion pin. We could then knock the pin forwards and out of the trunnion, before lowering the jack from under the wishbone until the spring was no longer under tension.



The manual says to undo the nuts and bolts holding the torsion bar lever to the crossmember and slide the lever forwards off the splines on the torsion bar. Ha! There was no way this lever was moving, and there was not enough room to fit the adjuster plate between it and the crossmember.



Because we were going to be removing the wishbone arm and the adjusting lever so we could clean and grease the torsion bar splines for later adjustments, we had to mark their relative positions. We didn't want to scribe the metal and introduce a potential weak point, so measured the height of the arm's outer bolt hole from the ground to act as a help when reassembling.



The manual also says to 'Pull off the forward splined end of the torsion bar from the splines in the wishbone arm and lower the wishbone to the ground.' Obviously that didn't want to slide anywhere either. Note the pen marks here for position - we weren't expecting them to survive the cleaning, which was why we also took the measurements in step 20.



Unsure exactly how to slide the wishbone arm along the torsion bar splines, we called Russ. He advised knocking the wishbone arm back on the splines with a copper hammer. This did the trick, disengaging the wishbone arm from the pivot spigot secured to the fulcrum pin so that we were then able to manoeuvre the torsion bar off the car and away.



24 This is the spigot pivot, a thick metal cup that is secured to the rear of the pin that passes through what remains of the bush in the eye bolt. Where the splines on the wishbone finish, there is then a recess that sits over this cup and secures the front of the torsion bar/wishbone arm assembly to the car's chassis rail. Notice how off-centre the pin is in the eye bolt because of the worn bush.



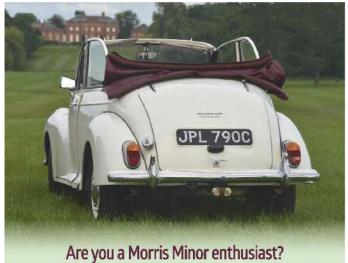
5 You can see where the collapsed bush has allowed metal-to-metal contact between the pin and the eye bolt, damaging both. We opted to replace the eye bolt too as they are only £13.57 each. It is secured with a large nut on the inside face of the chassis rail, having passed right through this member.



We had thought that the eye bolt would be a nightmare to move, expecting it to be rusted into the chassis rail. However, after undoing its securing nut and putting the trolley jack handle into the eye to act as a lever, it turned easily enough and could be gently knocked out from behind.



And there it was, in good shape apart from the ovality of the eye. We should note here that one of the biggest problems was finding the right sockets, spanners, nuts and bolts because the Minor uses a weird mix of Whitworth, BSF and UNF fixings, and not all are as original. The moral is to go slowly, and test thoroughly before applying pressure.



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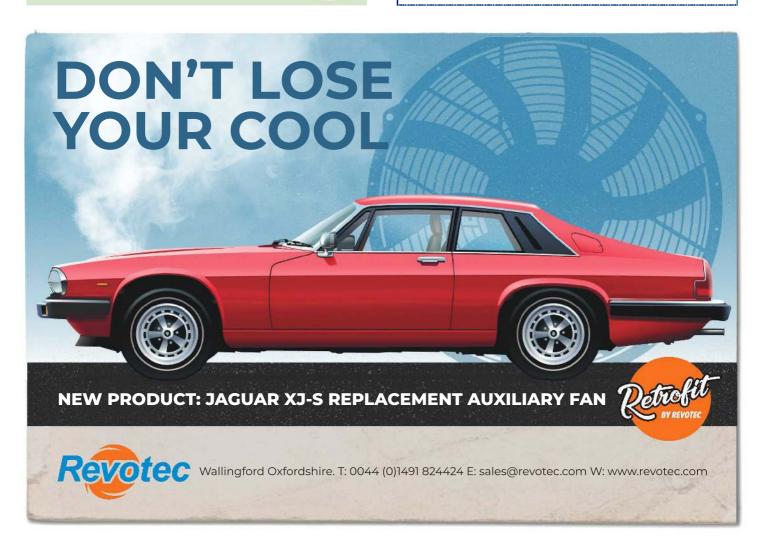


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DRIVER'S Diary



Martyn Morgan-Jones

Contributor

Martyn has been passionate about classics ever since he joined the Imp Club back in 1981 and has owned around 15 Imps over the years. If money was no object he'd love to own a 1972 Porsche 911S, an Austin-Healey 3000, a Renault 8 Gordini and another Stiletto!

MY FLEET

1983 DAVRIAN Mk8

OWNED SINCE: 2000

1969 SUNBEAM STILETTO

OWNED SINCE: 1986-1996 and again since 2010

1989 PORSCHE 944 TURBO

OWNED SINCE: 2018

2000 JEEP GRAND CHEROKEE

OWNED SINCE: 2018

To-do list

- o 944 Teurbo: Use it
- · Darian: continue with fitting medifying driver's seat.
- · Fit cut-off switch.
- · Fit new wheels/tyres.
- · Stiletto, on hold.

THOUGHT OF THE MONTH

I've been pondering the aesthetics of moderns versus classics. To my mind, in general, modern car styling has reached an all-time low. Massive grilles, fake exhausts, fake vents, swathes of pointless body slashes and creases, massive wheels with rubber band tyres, not to mention more than a degree of design uniformity. Yet at the recent Lancaster Insurance Classic Motor Show, the halls were chock-full of cars that screamed individuality and style. What's more, these were cars you could identify by their shape, and not just by their badging!

The Porsche is better than new



Nigel Pittard of the Pontyclun Repair Centre has certainly worked his magic on Martyn's 944. It is now very shiny, and more importantly it is very solid too. Top job.

ell, the 944 is back home, and it's really good to have it back in my clutches. Nigel Pittard at Pontyclun Vehicle Repairs has done an incredible job on restoring the car to its former glory. Better – much better – than its former glory, in fact.

I'll fill you in on some of the magic he's worked on my car. As I mentioned in a previous diary instalment, despite having a bodyshell that was galvanized at the factory, the 944 is not immune from rust. All I can think is that Porsche's galvanizing process was a tad hit and miss, protecting some

sections of the bodyshell well but missing others – most notably the sills.

Having looked at a wide variety of 944s, they all seem to have had rust issues along the door bottoms, the leading edges of the trademark flared arches, and the aforementioned sills. Oddly, it's the offside sill that seems to suffer the most, not the nearside which has to contend with much more in the way of roadside dirt and puddles etc. Thankfully though, the nearside sill on my car is in excellent condition.

Anyway, after discussing what work needed to be done,

I ordered a new offside sill from Porsche Cardiff. Nigel then made a start on the tasks in hand, promising he'd keep me updated as to progress, and to let me know what, if any, problems he might uncover along the way.

Well, uncover problems he did! Very early on in the project, he rang to say that upon removing the old sill, he discovered that someone had been there previously. What looked to be a proper, one-piece sill was in fact a patchwork of metal that had been covered in filler and sprayed over with stonechip.



Two pieces taken from the old sill – just look at the thickness of the filler, not to mention the overlapping metal! Martyn's not sure who did the work, but it probably would have been easier and cheaper (not to mention much better) if they'd fitted a replacement sill.



The 944 sailed through its MoT, with no advisories either.

Aesthetically, the work had been done very well, which is why it fooled a lot of people, me included. Of course, it was simply done to disguise the extent of the rust, which had also spread to the inner sills and the sill extensions.

Unfortunately, Porsche doesn't do repair sections for these areas and they were most definitely needed, so I ordered some off the internet. Whilst they looked OK, the fit was awful and Nigel had to spend many an hour cutting, welding and reshaping the repair sections in order to get them to fit correctly and blend them into the existing panels. As you can see, he did a first-rate job.

Nigel also informed me that there was quite a lot of rust evident on the offside rear suspension mount, including a hole the size of a ten-pence piece. To be honest, I was really shocked to discover just how much rust was evident, and hugely disappointed as to just



Martyn recently bought a set of nearly-new Avon ZZS road-legal track tyres for the Davrian. Nice!

how much had been covered up. Within a short space of time, the job had escalated from localised repairs to a partial restoration.

Anyway, having recovered from this body blow (literally!), and having raided my various piggy banks, I asked him to

"I was really shocked to discover just how much rust was evident"

tackle all the extra work, and also to sort out every other blemish on the car. In for a penny, in for a pound and all that... Over the next two months, I was regularly updated with phone calls, texts and photos. Nigel is a very thorough chap.

To cut a long resto story short, Nigel plug-welded, spot-welded, seam-welded, fabricated, rust-proofed, primed and painted my car to perfection. Additionally, the box sections and new metal have been treated with rust preventative and then drenched with Waxoyl. Then, after checking with me first, Nigel undersealed the underside and under the wheelarches. Finally, he mopped and polished the entire bodyshell.

Am I pleased? Extremely. Whereas before it was shiny but patinated with age and with evidence of road rash and car park altercations not to mention the onset of rust, it is now super shiny, unmarked, and has a perfect paint match. And, crucially, it's now very solid in the places where (unbeknownst to me) it had been ropey. All in all, it is a superb job.

Whilst the 944 was away, I managed to find a little time to work on the Davrian. It's still perched on axle stands though. Why? Well, rather than strip and re-seal the split-rim Revolution wheels, I've sold them to the daughter of the chap I bought them from some ten years or so ago. She's going to restore and seal them over the winter, and they'll then be fitted to her rather tasty Imp.

Of course, the Davrian was now without wheels. After looking at the various 13in wheels on offer, and after serious consideration, I decided to replace the Revolutions with... well, Revolutions. Except the ones I have chosen are one-piece Revolution Competition four-spoke wheels. After chatting with the chaps at Revolution Wheels, and checking clearances using



Revolution Wheels supplied printed templates which Martyn cut out and then used to check the Davrian's disc/caliper for clearance.

templates they sent me, I've chosen 6in rims with zero offset for the front plus 7in and zero offset for the rear, which are ideal for my brake/caliper set-up and for the 185/55/13 Avon ZZS tyres I've bought. The ZZS is an all-weather, road-legal track day tyre. I'm not a fan of over-wide tyres on classics, and feel that the 185 size will be plenty wide enough for the Davrian, and extremely grippy too. I've also made progress with fitting the new driver's seat, not exactly a fiveminute job as I have to do some glassfibre work, cut harness slots, trim it, fit padding and much more. Hence the amount of time it's taking me.



Fitting the new seat is proving to be quite a task ...but he's getting there.

DRIVER'S Diary

Ivan Ostroff Contributor

None of the cars in Ivan's stable are in concours condition, but all are in proper mechanical order and in continual use. He believes in using classics in the way they were designed to be used: simply driven every day.

MY FLEET



1989 JAGUAR XJ6

ENGINE: 3590cc inline-six **OWNED SINCE:** 2007



1988 JAGUAR XJ40

ENGINE: 3590cc inline-six OWNED SINCE: 2015



1982 RMB GENTRY

OWNED SINCE: 2012

1965 DAIMLER V8

ENGINE: 2.5 litre Saloon, **OWNED SINCE:** 1978.

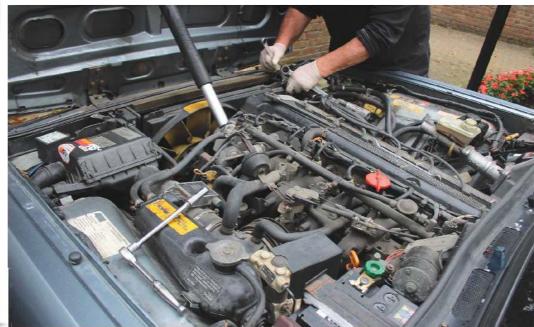
To-do list

- Lubricate door handles yet again on the XJ6 and the Sovereign.
- Replace heater fan and foot well ducting on XJ6.

THOUGHT OF THE MONTH

We moan when we have to carry out repairs to our classics, but is it reasonable to complain about original components that have worked reliably for more than 30 years?

Keeping cool for 31 years



Air-conditioning expert Denis Bourne was tasked with sorting the Sovereign's system.

couple of months ago the air-conditioning system in the 1988 XJ40 Sovereign was gassed up after replacement of the receiver-drier unit. Therefore, I was rather surprised when the system failed yet again. Even though the air-con system is used mostly in the summer, the system also needs to be working properly if you want to keep the screen from steaming up on damp winter nights.

A quick examination by airconditioning guru Denis Bourne confirmed that the condenser was now leaking and had finally given up the ghost. Since it had been in place for the last 31 years, I suppose it hadn't done too badly. Fortunately, SNG Barratt had a replacement in stock for a very reasonable price, and it was delivered within a couple of days.

When Denis came over to fit it, he first checked that it was the correct part before setting to work. After removing the two hydraulic rams that usually support the bonnet, a prop was wedged in place so that the bonnet was held open vertically. The two refrigeration line pipes to the condenser were then undone, followed by the four bolts that retained the radiator cowl panel, which in turn holds the condenser in position. The metal clips that hold the fan cowl to the

horizontal radiator cowl were then removed and then cowl could be lifted free.

With the bonnet still propped open vertically as described, we were then able to lift the condenser out of position. Once out of the car, it became clear how badly it had deteriorated. In fact we were amazed that it had not begun to leak earlier because the unit pretty much fell to pieces before we could lay it on the ground, and upon further examination was so blocked with years of crud that it was a minor miracle it had been working at all.

Lowering the new condenser into position was fairly easy, but it was a fiddly job jiggling it around until the two lower fitting lugs finally slid down into their seats. It was at this point that we realised the two refrigerant lines would not marry up to the pipes on the new condenser. It was extremely frustrating, but no matter how much we pushed and shoved, we simply could not get the pipes aligned so that the lock nuts would locate onto the threads of the pipes.

Of course, this is not an untypical situation when purchasing an aftermarket product. The only answer in this instance was to remove the new condenser from the car so



After 31 years in situ, the old air-con condenser was blocked with crud, and so rotten that it virtually fell apart.

DRIVER'S Diau



The new condenser was an aftermarket part that slid into place, but took some jiggling for the lugs to slot into position.



Unfortunately the refrigerant lines on the car would not marry up to the new condenser without some judicious tweaking.



Once everything was lined up properly, just two bolts at each end of the radiator cowl hold the condenser in place.



These metal clips are then used to hold the radiator fan cowl to the horizontal radiator cowl.

that Denis could then bend the two pipes very gently until they would mate correctly with the refrigeration lines in the car. The condenser was then lowered back into place - they do say practice makes perfect, and Denis' eye was spot on this time because following some more jiggling, the lower mounting lugs dropped into place leaving the pipes from the condenser lined up perfectly with the

refrigeration lines. These were duly bolted into position.

The radiator cowl panel was then refitted with its two securing bolts at each end. The clips that secure the radiator fan cowl to the radiator cowl were then refitted, after which Denis finally tightened the nuts securing the refrigerant lines to the new condenser. It is essential of course that this joint is perfectly gas-tight.

"After about ten minutes, it was time to test the results"

After moving the car within reach of an electricity supply, Denis then set about gassing up the system. After about ten minutes, it was time to test the results and to my great relief, all was well – the air conditioning was fully revitalised and blasting out chilled air once more. Before leaving, Denis checked everything very thoroughly for leaks one final time, but thankfully none were found. Hopefully the system should not require any further attention for some time to come. CM



The refrigerant lines to the condenser must be perfectly tight.



After re-gassing, the system was checked thoroughly for leaks.

DRIVER'S Diary

Mike Taylor Contributor

Mike is based in Australia and although his Stag and E-type have both been restored to a very high standard, both still require regular maintenance.

MY FLEET

1965 E-TYPE JAGUAR

ENGINE: 4235cc inline-six **OWNED SINCE:** September 1986



TRIUMPH STAG

ENGINE: 2997cc V8 OWNED SINCE: 2004

THOUGHT OF THE MONTH

Increasing the Stag caster angle became a far more involved task than I had originally anticipated. It is a shame that Triumph did not provide some form of adjustment when designing the Stag and 2000/2500 range, probably due to cost considerations. The accuracy of modern car component manufacture and assembly ensures that vehicles depart the factory very close to their design specifications, but manufacturing techniques in the 1970s were much less precise, which likely resulted in some specifications being out of tolerance when a car exited the factory. Cars designed and built in this era really required a simple method of adjustment for critical areas like front suspension geometry.

Setting up the Stag's caster angles



A homemade angle gauge was used to confirm the correct 20° steering angle. You can also see the steel plate Mike fabricated for attaching the magnetic camber gauge to the alloy wheel.

have never been completely happy with the Stag steering, as it feels nervous and tends to wander more that the E-Type or modern cars due to small caster angles - 0.8° on the left and 1.4° on the right, whereas the specification is 2.5°. There is no simple provision to adjust the front suspension geometry. Small changes to camber can be achieved by placing shims between the bottom of the strut and the hub upright, but changes to caster are more involved. The lower radius arm's fore-and-aft position is controlled by a fixed length drag strut, and the top of the strut is fixed in the strut tower. My calculations indicated that a 10.5mm increase in drag



After fitting spring clamps, the nut is removed with a battery operated impact wrench.

link length would increase the caster by around 1°.

After removing the drag link and strut from one side, it appeared the maximum increase in the length of the drag link was about 10mm without major changes to the construction of the link, so a twofold approach was required to get the caster to the specified value: increase the length of the drag links and move the position of the top mounting. Suspension Concepts, a local company to me in Australia, advertise adjustable top strut mounts for a Stag that, according to their literature, allow up to 10mm positive or negative adjustment to caster and 20mm negative to 10mm positive for camber which, together with increasing the drag link lengths, should allow an increase in caster to original specification and equalise camber. A set was ordered, and whilst waiting for its arrival I machined a 10mm spacer for one drag strut and an 8mm spacer for other to equalise caster prior to top strut adjustment.

When the kit arrived, as the strut was off the car I could immediately replace the top

To-do list

- Investigate tight window winder operation
- in the Jaguar
- Cure the slow operation of the Stag passenger door window
- Replace the Jaguar light gaskets

bearing using a couple of coil spring compressors to remove tension on the spring. The best way to remove the retaining nut on the original Triumph top bearing is with an impact wrench, and my battery powered wrench was up to the task so there was no need to resort to the increased output of the pneumatic wrench. However, when offering up the new top mount, a major design problem became immediately obvious as there was insufficient thread exposed to attach the retaining nut.

I phoned Suspension Concepts and sent them a picture of the problem. They requested I refit the original top bearing and return the complete strut together with the kit (at their cost), and they would fit the correct top plate and return together with correct parts for other side.

DRIVER'S Dia



Offering up the new top bearing highlighted an issue with an incorrect adjustable top mount plate

I received the rebuilt strut and modified kit in a couple of days, so fitted the strut to the Stag and promptly found a second design issue – the width of the new strut plate was only slightly less than the width of the strut tower, and consequently I could get very little adjustment for caster, but plenty for camber which was not what I required.

The easiest fix seemed to be to remove the strut and top plate, then cut a 10mm slice from the rear side of the plate that would allow 10mm of movement for the top bearing, thus increasing positive caster. A line was marked on the plate that went from 10mm and tapered to zero so it would still be completely gripped by the retaining plates, and after cutting off the excess material, the top bearing was reassembled and trial fitted to the suspension tower to check the range of adjustment. The results indicated caster adjustment was now from 0 to 10mm positive, and plenty of camber movement which was not measured as it was more than required. After painting the cut section of the plate, the strut was reassembled and fitted to the car.

Prior to replacing the drag link, the flexible bushes at the chassis end needed

modification to compensate for the spacer and allow sufficient thread to be exposed for the retaining nut. I had purchased a set of polyurethane bushes to replace the rubber ones on the car, so thought I would initially reduce the length of an old rubber bush to confirm the drag link operation. The rubber bush was reshaped on a sanding belt, reducing the length by 10mm whilst keeping the same hemisphere shape, then the link was fitted to the car without any problem. The other side was treated to the same modifications and after tightening all drag link fastenings, the top strut bearings were adjusted to give maximum caster and mid-point camber. The polyurethane bushes will be similarly reshaped and fitted in place of the rubber ones later.

The car was then taken off the hoist and driven round the block to settle the suspension prior to measuring the camber and caster angles. I use a magnetic camber gauge for measuring both camber and caster, but attaching it to nonmagnetic alloy wheels poses a problem. The solution was to remove the centre caps from the front wheels and fit a steel plate over the wheel centre, retained by a countersunk screw attached to a specially



A 10mm slice was removed from one side of each plate.



The adjustment plate required 10mm to be cut off to allow maximum positive caster adjustment.



The top adjustable mount with modified plate now fitted to

machined nut on the inside of the wheel

First the camber was checked and adjusted to 0.2° negative on both sides, then caster checked. Caster measurement involves rotating the steering 20° in one direction, zeroing the gauge and then rotating the wheel to 20° in the opposite direction (40° total) and reading the result. Ideally the front wheels should be on turntables, but two pieces of mild steel plate under each wheel with lubricant between them enables the wheels to be easily rotated. With some slight adjustment of the top bearing, caster was confirmed as just under 2.5° positive on each side. The top bearing adjustment plate was tightened and a test drive resulted in much improved steering response – a good result.

As to why the Stag's caster could not be adjusted properly in the first place, I have no idea. During the restoration I discovered that there had been a hit in the LH rear wing with poorly repaired damage, and a new LH front wing had been fitted. This probably happened early in the car's life as the paint was well weathered. The front LH bumper mounting was bent so the chassis leg could

have been pushed back slightly, which may explain the 0.2° less caster on the left. However, there was no distortion on the inner front panels, so I can't think that the chassis legs would have moved enough to make that difference to caster. Other possible causes of error are the cup that is welded into the chassis leg where the rear of the drag strut fixes could have been incorrectly located, or an error in the positioning of the front crossmember. One other possibility is that the drag struts are too short.

As there is no caster adjustment, I have presumed that this Stag was built at a time when standards had dropped and cars just came off the line with no camber or caster checks. The specification is 2.5° plus or minus 0.5°, so my 1° may have been seen as OK at the time. I had friends in the motor trade in the 1960s and '70s working in major dealers, and they told horror stories about the amount of work that the dealer had to complete on cars delivered from the British Leyland factories before they could be supplied to the customer. My car was shipped direct to Australia, and probably never had the front CM geometry checked.



The drag link complete with spacer and reshaped rubber bush ready for fitting.

DRIVER'S Diary



Iain Ayre

An expat motoring author and journo resident in Vancouver, lain was unable to resist the opportunities that comprise his fleet of projects, but is also unable to muster the focus, energy or organisational skills to complete them.

MY FLEET

1947 BENTLEY MKVI

OWNED SINCE: 2015 ENGINE: 4.25-litre straight six

1957 BENTLEY S1

OWNED SINCE: 2019 **ENGINE:** 4.9-litre straight six

1958 CHEVROLET DELRAY

OWNED SINCE: 2005 ENGINE: 5.7-litre V8

1972 TRIUMPH TR6 **PROJECT**

OWNED SINCE: 2019 ENGINE: 2500cc straight six

1974 MINI MARCOS PROJECT

OWNED SINCE: 2015 ENGINE: Cooper-spec 1100cc A-series

1984 DODGE CAMPERVAN

OWNED SINCE: 2009 **ENGINE:** 6-litre V8

1990 ROVER MINI COOPER RSP

OWNED: since 2016 ENGINE: 1275cc A-series

1992 JEEP CHEROKEE

OWNED SINCE: 2006 ENGINE: 4-litre straight six

1992 MAZDA MX5 SUNBURST

OWNED SINCE: 2015 **ENGINE:** 1600cc

199X COBRA **REPLICA PROJECT**

OWNED SINCE: 2007 ENGINE: currently 4.6-litre Ford V8

Hydramatic gearbox on the Bentley S



The Bentley really is magnificent and very handsome piece of kit. Iain reckons it will look even better with two doors and a soft top that follows a slightly lower version of the same roofline.

To-do list

- Buy metal for prototype
 Cloud sill frames
- · Chase parts for Bentley SI transmission
- Build Marcas and Cobra
- · Sell TR6 project

his is part one of hopefully just two parts, although that may be optimistic. The plan last summer was to buy the 1957 Bentley S, get it transported home, bleed the brakes and take it for a drive. Several months later, the going-for-a-drive part of that plan is still a distant dream. The previous owner, my elderly friend Robin, had been a marine engineer and had owned the car for a significant percentage of his life. He used to drive it to work, but took it off the road to sort out the brakes and a few other minor issues. He vaguely thought that had been ten years or so ago, but the paperwork says it was in 1989. Time flies when you're having fun.

The tranny fluid had been drained in the initial flurry of activity, and Robin believed he had replaced it. I wasn't able to test it out though because the ancient brass carb floats had split, scuttled themselves and sunk rather than surrendering. I soldered them up to functionality, refitted them and persuaded the engine



The Bentley is filleted. Iain must remember to check the condition of the water gallery plate on the back of the cylinder head while the engine is out - it almost touches the bulkhead, so if it starts leaking, the engine will have to come out again.

to run. It now mumbles quietly to itself, accompanied by an exhaust blow. The supposedly re-rubbered brakes were as yet un-bled, but I could at least drive the car for a few feet on the driveway.

Only no, I couldn't. The elegant one-finger electric gear selector seemed to select as suggested, but forward motion came there none. Backwards with some revs got the hint of a feeble lurch, but that was all.

DRIVER'S Diau



The automatic gearbox is a Hydramatic unit from General Motors, but with Rolls-Royce alterations such as the mechanical power assisted brake servo on the side at the back. If regularly used, it's a good reliable box.

Usually, a lack of drive from an automatic transmission means low fluid. Okay, Robin said he had replaced it, but let's check: there's a dipstick under the carpet. A dipstick with no fluid registering even on its very tip. Either Robin forgot to fill it up again in 1989, or it has all drained out unnoticed over the ensuing 30 years. So I had been trying to drive the car with the transmission bone dry. That, as they say in medical circles, is contra-indicated.

The guts of automatic transmissions are well outside my comfort zone, although I have tackled some major engine work with possibly misplaced confidence in the past. I know vaguely how trannies work, but this one apparently has a fluid coupling rather than a torque converter. As I don't actually know why a fluid coupling is not a torque convertor, I decided to find some tranny magicians to overhaul the box.

The first recommended transmission repair shop kept the car for a bit and then called to tell me it wasn't a GM Hydramatic gearbox. Oh yeah? Bentley Motors Ltd would beg to differ. Given that shop's scary level of expertise, I retrieved the car and wrangled it past the two-year restoration queue into RWM and Co in Delta.

Bentley parts prices can sometimes make Porsche look like Walmart, but there are options. The General Motors Hydramatic is an American transmission, fitted to various Cadillacs and Oldsmobiles from 1939 on, and used with minor mods by Rolls and Bentley from 1946 until 1967 in Silver Dawns, Silver Wraiths, Silver Clouds, Silver Shadows and Bentleys from S1 onward. There's a mechanical clutch on the side of the gearbox that operates the mechanical brake power assist mechanism, so there are some different internal parts, but Dave at Autotran in Massachusetts sells an overhaul kit which is specifically for the Rolls/Bentley version of the box. It's more expensive than the Cadillac kit, but cheaper than what it would cost shipped to me in Canada from the UK.

I've taken the engines out of a couple of Bentley chassis myself, but getting the complete engine and transmission out of the Bentley and back in exceeds the capacity of both my engine



Bentley B171DE must have been built in late 1956, and there were minor changes in the transmission used on the straight six, while the SII with its V8 uses a different Hydramatic. Getting all the right parts is possible, but it can be a tricky undertaking.



What goes on inside an automatic transmission makes sense when you look at how the pieces work, but that's one aspect of life lain is more than happy just to leave to the transmission magicians.



Looks as though he needs a new front oil seal on the diff. It can be updated to a modern oil seal with some machining, but a new felt seal is six guid and that will do for the moment.

hoist and my cracked garage floor. In any case, I'm supposed to be busy chopping the roof off the doomed Silver Cloud that rolled straight into my garage when the Bentley left. So I added that work to the bill for stripping and de-rusting the transmission and removing the brakes, which came to 114 hours and \$10,000 (£6000). even with a discount.

Sitting empty of oil in an inevitably damp garage had resulted in major corrosion inside the gearbox, and all the valves that should move under the pressure of a pinky finger had to be delicately drifted out of their aluminium housings before being de-rusted. The alternative would have been £3500 from Flying Spares for a rebuilt transmission, but shipping it to Canada would have meant being gouged by UPS or Fedex and the border tax clerks, and my rusty core may

not have been accepted.

I later learnt that it would have been okay if complete, so that could maybe have been the cheaper option in the end, but mixing it with the RR big boys is expensive any way you play it. I keep reminding myself that this car is a demonstrator for the Ayrspeed RR Cloud and Bentley convertible two-door conversions, and selling a couple of those will make ten grand look irrelevant.

Buying the rebuild kit in Massachusetts meant paying Oldsmobile prices rather than RR prices, but even so it was US\$450, or £350. The early Hydramatics also have a few obscure different parts from later ones, so there was more chasing down for the final seals and springs in the US and UK, with phone pictures and measuring-calliper action. Hopefully though, I now have everything I need.

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RUS 683M LRU 5H RUS 3L RVG 5M Y366 RVU 227 RW 8 RWG

900 RXG RYK 895 RYL 3S RCA 544B

SAV 361M SAY 3R SAY 170R SAZ 1 L5 SBC 283 SBJ SBL 40M 139 SC 4396 SC SCA 83P SCC 104K SCO 713L SCR 33N

SGU 985L SH 7640 SHA 1G SHA 24R RSH 4W

RD 3197 RDB 38 751 RDW 916 REA REC 703R RED 64R REE 744S E9 REE REG 417M REG 417X RE

ROB 813Y ROB 83Y ROD 53N

ROF 3R ROG 63R ROG 33R 1206 ER RDG 6B RB6 ERS ROH 17B R6 LER R9 LER ROM 937 RON 586R RON 581R V812 ONY RON 5797 RON 587M RON 857M RON 857M RON 897M RON 3938 RON 3617 RON 3619 RON 3619 RON 913R

S6 PGJ 8 PGJ 9 PGJ 924K 1531 PH PH4 998 748 PH4 PH4 57P P111 LOK PH0 563 59 PHW PIA 9746 PIJ 3252 PIL 15 PIL 111 PIL 4 3588 PJ 7461 PJ 7461 PJ 7569 PJ 655 PJH PJ 5659 PJ 655 PJH PJ 583 9217 PK PK PK 130P 3346 PL APL 47T PLA 38 PLA 73R PLA 73R PLA 73R PLE 888

TIA 4216 TIB 8 T188 UEE TIL 7 TIL 3 TIL 15 TIL 6749 71 MMO TKA 33 97 TKE TLE 858 250 TM D15 TEV FDS 733D UCA 570D 896 TMK TNC 94J TNC 7 TNU 700 TNW 81 W57 OCK STO 788F S701 NES 9 TOP F57 OCK H57 ONE W570 KES STR 470N STU 106V STU 985L 607 STU STU 601R STU 427M 5 TUD TOB 8131 TOG 3Y TOL 16Y

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TUK 1L TUT 73R U

WES 155K A988 WET W377 ONS E227 WEX WEY 408M 6449 WF WF 6801 Y633 WFC

WGE 555 WGU 669F WGV 59 WH05 OUL W115 OND W115 ONS W157 OWS 6702 UB UBD 260G UCA 575D UDD 874 UEY 804T UEY 757T 5655 UG UGW 475F Y896 UKE 5 UMT J658 UND G909 UNU

WLL 4 WME 1011 WNG 217 JWO 813N WP 4687 5 WP WPC 690 WPE 1Y WPJ 9 G199 WPN WRA 9S WRA 7S WRA 7S WRA 9S WRA

VA 2 VAL 769Y VAL 169Y 621 VAL VAM 318D MCV 4N VAR 641 VAZ 21 VBJ 4 VEA 73S VEF 316M VEN 777T VET 2A VET 1E

VEZ 2222 VFC 99 VG 5830 VGV 118R 563 VHW

563 VHW VIL 4 V15 OME VMX 474X VMX 505X VN 9223 VOB 8S VON 501 VON 579J

WUT 100 WV 9957 WVG 750 WWU 208J WWW 80X E907 WYA



XFX 707B XGU 928M 567 XJ

XLL 409 XPX 455F XS 9748 XTU 616E



KYA 559 KYA 51N AYA 55A YGY 473S YAX 69 YCG 40

WAC 180X 883 WAE WAG 312S KPW 260N WAH 330S WAH 10S KPW 41N 234 WAL WAL 35Y WAL 35S YCG 40 YDL 59 YEA 7S YEL 754 YEL 410S A808 YEP YGA 919 YGY 440S YGY 430S YLM 466 YLP 97 853 YMB YMG 777 YND 748L

WAL 33Y WAL 84Y W4 NES WAR 54W PWA 77S WCG 68 8961 WD 2089 WE 1589 WE NWE 8B SHE 24R SHE 458Y SHE 80Y SHE 412S SHH 29 SHT 805S

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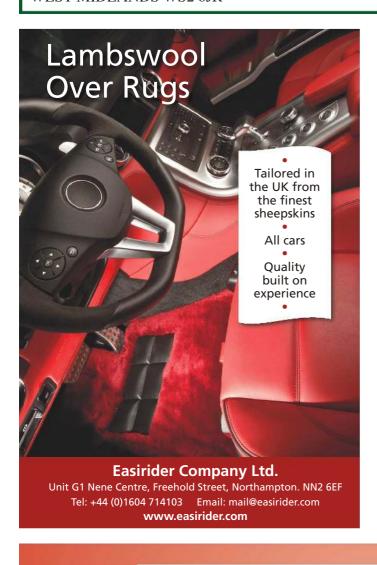
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DRIVER'S Diary



Will Armston-

Will has been collecting classic cars since before he could drive and now has quite a fleet of Morris Minors. He's recently completed restoring his dream car, a 1950 Morris Minor Lowlight, and has another project of the same year waiting in the wings.

MY FLEET

1965 MINOR

ENGINE: 1098cc inline-four **OWNED SINCE: 2012**

1967 MINOR

ENGINE: 1098cc inline-four **OWNED SINCE: 2010**

1950 MINOR LOWLIGHT SALOON

ENGINE: 918cc sidevalve inline-four **OWNED SINCE: 2012**

1970 MORRIS MINOR VAN

ENGINE: 1098cc inline-four OWNED (BY MUM) SINCE: 1980

THOUGHT OF THE MONTH

It's satisfying taking a car apart which isn't terribly bodged or with every bolt rusted solid time spent applying the copper grease when last assembling it is certainly well spent and much appreciated later.





Lily was starting to look good once more after two coats of primer.

ily, my 1967 four-door Morris Minor, has been on the road for seven years now. I cut my teeth restoring it with dad. In that time it's been used as an everyday car and has been kept outside in all weathers. The paintwork was only cellulose, sprayed by us, and hasn't fared that well.

I have heard it said that modern cellulose paint is of low quality, which could be part of the reason why this hasn't lasted. Alternatively, it could be down to the quality of the spray job or the lack of epoxy primer under the paint. Either way, it was becoming obvious that if we didn't do something about the paintwork now, it would

be a much larger and more expensive job later.

Since Lily's restoration, I have become far more aware of the different paint options and decided that Lily needed a similar treatment to the Lowlight – a bare metal twopack respray. This can't be done at home without proper equipment, because two-pack paint contains lots of nasty chemicals and you need air fed masks and special filtering equipment for ventilation. Most spray shops aren't that keen to take on the full respray of a restored car because it's impossible to know what's underneath the paint; exactly why they are reluctant became clear to us later. Luckily a friend was willing to do it, provided I assisted with the rubbing down and preparation work.

Before taking the car to him, I needed to get Lily into a position where it could be stripped and resprayed without any serious remedial work. This included taking the front wings off to deal with the dreaded rust spot near the front door. Morris Minor wings are notorious for rusting close to the A-post, and removing them normally reveals a whole

To-do list

- For Lily:
 Re-fit door tops
- · Re-fit Lights
- · Re-fit interior
- Source 1275 Morris Minor to Marina gearbox engine plate
- · Cut back paint

Lowlight:

- · Re-apply rust proofing
- · Touch up paintwork
- · Fix door lock
- · Replace cracked headlight
- · Service the engine

host of problems, so it was with some trepidation that we took them off. Thankfully, underneath there were no horrible surprises on either side, and the zinc paint and Waxoyl that we'd put on all those years ago had done a good job of preserving the metal.

There were one or two points of deterioration and we did have to make one small patch above the bump stop on the nearside, but this was fairly straightforward with the wings off. The driver's side wing



The state of Lily's paintwork was clear to see from the rusty grille.

DRIVER'S Diary



The dreaded rust bubbling at the rear of the front wings...



...and the rear wing after de-rusting during the repair.



Lily minus the old cellulose paint after day one of paint stripping.



Filler was applied to get rid of any dents or body imperfections.

needed a small repair near the A-post, and I decided to replace the passenger side wing with a good used spare I had in stock owing to an earlier dent-andfiller job a few years ago to keep the car on the road.

To get a good finish we needed to remove the rear wing beading, and so loosened up all the rear wing bolts and dropped the wing away from the bodywork. What was very pleasing was that all the bolts came out easily, a result of the copper grease we'd put on when assembling the car. As I was working under the rear wing I did notice a small rust hole, and before I knew it, a



Inner wing rust hole repaired.

hole the size of my thumbnail ended up needing a patch bigger than my hand to repair it. Other than that, it didn't need any welding. Not bad for seven years on the road!

I kept the car in a drivable condition to get to the spray shop. This meant that the front panel, back seats, door trims, weather strips, badges etc could be removed before setting out, but upon arrival the headlamps, sidelights, door tops, bumpers, bonnet and boot lid, along with wipers, washers, door catches and handles were all rapidly removed. We wanted to use paint stripper to get back to bare metal, but before doing this we carefully checked where the filler was – these bits were stripped back to the filler with an electric sander as it is not a good idea to get paint stripper on filler and then paint over, because it could bubble through later.

The stripper worked quickly. As we'd already done this during the last restoration, there wasn't a huge amount of paint to get off, and by the end of the first day the car was largely back to bare metal. The paint stripper was left to evaporate overnight,

"It is not a good idea to get paint stripper on filler - it could bubble through later"

and most of the next day was spent sanding using 40 grit production paper to remove any remaining paint.

It was at this point we began to realise why professionals tend to steer clear of a restored car, and also why they like to use new panels, because all four wings had some degree of repairs to them and all needed filling and sanding smooth. In the end, this meant five separate skims of filler were needed to achieve a level finish.

Once we were happy with this, we applied numerous coats of two-pack primer filler, and then a thin guide coat of dark paint which was then sanded lightly off – this allowed us to check that the bodywork was smooth, as any low spots showed up as remaining patches of the dark paint. The final smoothing and sanding was very time-consuming, but after a lot of hard work we had the car ready for the top coat, three long days after driving the car to the spray shop.

After the paint, the next job will be to get the car back home and re-assemble it there. No doubt this will take much longer than dismantling as it needs to be done carefully.



The guide coat was then applied, followed by a lot of sanding!

DRIVER'S Diary



Simon Goldsworthy Editor

Simon always has too many projects on the go, which means progress on individual cars can sometimes be slow. On the bright side, it does mean he never gets stuck watching telly of an evening. He like virtually all classics, but has a weak spot for anything small, basic and generally overlooked.



1946 STANDARD 8 TOURER

ENGINE: 1009cc sidevalve four **OWNED SINCE:** 2013

1966 HERALD CONVERTIBLE

ENGINE: 1493cc OHV four **OWNED SINCE:** 2012

1983 ACCLAIM

ENGINE: 1335cc OHC four **OWNED SINCE:** 2015

2005 MG TF135

ENGINE: 1796cc DOHC four **OWNED SINCE:** 2018

To-do list

- Finish the Standard 8 interior
- · Sell the MG TF

THOUGHT OF THE MONTH

It is possible to have too many cars! Once you have to start making up journeys just because a car has not been out for a couple of months, then I would suggest that you have reached that point. And while it can be a wrench to sell one, it can also then be something of a relief.



The soft furnishings department

his month, I have been continuing with progress on trimming out the interior of my Standard 8 Tourer, and I've surprised myself by actually enjoying the process! I think it helps that the changes are large, immediate and for the better, and that I don't appear to have made any major errors as yet.

Rather than the trim panels though, the work started with the trafficators located just behind the B-posts. There were a few sundry bits of these in the pile of pieces that originally came with the dismantled car, enough to make up a unit for one side. However, as well

as being in poor cosmetic condition, this was the original 6v item and I had changed the car to 12 volts. Some time ago I'd paid £100 for a beautiful pair of fully reconditioned 12v SF34 trafficators, which I'd been assured were the correct items for my car. Unfortunately, they turned out not to fit (so if anyone wants to buy a set, do get in touch!).

There was another problem with fitting trafficators in that without any kind of sealed box behind them, I couldn't see how to stop water from getting into the cabin when it rained. Since I have flashing indicators anyway and the trafficators

were only going to be a novelty, I decided to seal up the holes, but to do this in such a way that the process could be easily reversed if desired.

My solution was to drill and tap a section of steel bar, and use machine screws through the original trafficator fixing points. These screws were long enough to be used as adjusting screws, pushing the bar closer to the outer panel. Between this bar and the trafficator slot

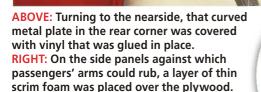


Simon decided to ditch the trafficators as flashing indicators had already been incorporated. A strip of foam and a length of steel bar...



There were enough pieces with the car to build one trafficator, but how do you stop water getting into the car?

DRIVER'S Diau



in the panel I placed a strip of thick and hard foam, effectively sealing up the hole. It may sound a bit Heath Robinson, but it works well and looks fine from the outside. I could even put a chrome strip on the foam to complete the disguise – I have mocked this up and it looks a whole lot better than it sounds, but I haven't added it to the finished article yet.

With the trafficator slots sealed up, I could then turn my attention to the trim panels that close them off from inside the cabin. Essentially there were three things on each side that needed consideration - a curved metal plate that made the transition from the seat back to the side panel, the side panel itself that closed off the bodywork behind the B-post, and the wheelarch below that transitioned from the seat base to this side panel.

The curved metal panel was easy enough – I used a spray contact adhesive on this and the Matador Red vinyl, stuck the two together and folded

the extra material around the edges. The panel was then screwed to the wooden frame using slotted raised head countersunk wood screws and cup washers in stainless steel.

For the side panels, I wanted to add some padding to the finish so I put a layer of thin 1/8in scrim foam between the plywood board and the vinyl. Rather than glue this in position, I folded the vinyl around the edges and used a staple gun to secure the edges. This will also be secured with wood screws and cup washers, along with the re-chromed clamps that are used to hold the side screens on during inclement weather.

I had wondered if I could get away with fitting these recovered panels and leaving the wheelarches as painted metal, but decided that the contrast of red and vellow resembled those rhubarb and custard chews we used to buy



With these covered panels fitted in place, the painted wheelarch then looked wrong and needs covering in vinyl.

four for a penny as kids. The only solution was to cover the wheelarch in vinyl, but doing that with a single piece of material was something of a nightmare as this had to be stretched and shrunk before it would lie flat. I did this a bit at a time, spraying contact adhesive on as I went, and got the offside looking fine once the seat and other trim panels were back in place as they managed to hide any bunching in the

corners. However, I decided to wait for some warmer weather before doing the nearside.

The foam was then covered with red vinyl, and this

In other news, I have sold my Herald convertible. This came as something of a surprise to me, given that I always thought it would be the last car to go. However, with project cars arriving thick and fast (there are two more undergoing work besides the Morris Minor which we've already started to feature), I simply had too many cars to care for properly, let alone use. So while the MG TF and the Standard are still up for sale, the Herald has moved on. I thought I would be gutted to see it go, but the Triumph was bought by two delightful lads who got it as a Christmas present for their parents and I couldn't be happier with that. I just hope it gives them as much pleasure as it has given me over the past eight years.

"The red and yellow resembled a rhubarb and custard chew"



...were used in conjunction with the original trafficator fixing points to seal up the slot in either side of the bodywork.



Chris and Kieran Barrett have bought Simon's Herald as a Christmas present for their parents.



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FORD CAPRI

WIPER DELAY

I have a 1973 Mk1 Capri 1600L which I have owned and driven for over 35 years now. I stopped using it as my main car quite a while ago, but still enjoy taking it out during the summer months.

My daily drive does however have one feature that my Capri does not, and I was wondering if it would be possible to retrofit an intermittent wipe function to my Capri without making any vast modifications or destroying the authenticity of the vehicle. I am quite capable of carrying out any electrical modification that may be needed, but I am unsure of how I would achieve this. Any help would be appreciated.

James Keats

There is a unit which is made specifically for classic vehicles to add the feature of an intermittent wipe function. It requires no extra switches and can be fitted to any wiper system which has a park function, which your Capri will have. The unit is around £32.50, while a more complex option which gives a wash/wipe function is also available for around £50. Both units can be found on this website: www.smart-screen. co.uk, but having not used this unit myself, this is only a suggestion and not a recommendation.

[If you want a recommendation from personal experience, I fitted a wiper timer module from www. retronicsonline.com to my Herald and was very pleased with the results. It does require an additional switch, but this can be mounted discreetly and gives you a choice of intermittent wipes at 2, 4, 6, 8 and 10 seconds – Ed]



The wiper delay kit from Retronics that Simon fitted to his Herald with good results.

HFIP IS AT HAND



The accumulator which may be the cause of the harsh ride on this Mercedes.

MERCEDES 250T

SOLID SUSPENSION

I would like to ask your advice on my 1978 Mercedes 250T estate (W123). The problem I have is that the car – even with no load in it – sits very low at the back. The suspension also feels very solid over bumps and dips, and fails to help smooth the ride out. I have been told that the problem may be due to a valve in the rear suspension, but that is about the extent of the information I can find. I know that the suspension should be self-levelling, but didn't want to start trying to fix it before I fully understood it.

Mike Hughs

The self-levelling suspension on your Mercedes is a complex system and quite importantly would need to be de-pressurised before you could begin to consider replacing any components. To de-pressurise the system you will need to slacken the bleed screw on the level control unit and drain off around 1/2 litre of fluid. When re-pressurising the system, you will need to top the reservoir back up and then, after disconnecting the link to the level control unit, move the lever fully upwards running the engine for 30 seconds or so at around 2500rpm. The vehicle will of course need to be jacked up to prevent it dropping down fully.

Having told you how to depressurise and the re-pressurise the system, the problem still remains as to what components you will need to change. I have assumed that you have no leaks which would be apparent, and providing the rear of the vehicle is not bottoming out we can assume that the pump and levelling valve are both working. This leaves the accumulators and struts. A failed strut will normally give a bouncy ride as opposed to the hard ride you have, so by a process of elimination this would suggest that the accumulators are the problem with your Mercedes.

Q&AHELP IS AT HAND

OPEL KADETT D

SOUEAKY BRAKES

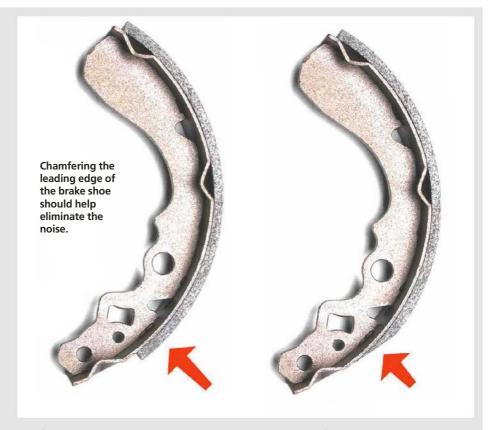
I have a mysterious problem with my 1979 Opel Kadett D. On several occasions during various visits to my local garage, I have asked them to locate an annoying squeal from what I believe is the rear brake drums. The squeal is apparent during braking in the initial stages of each and every journey, and will eventually disappear after driving for around two to five miles with normal brake use during the journey.

The drums have been cleaned and checked, as have the brake retaining springs and brake shoe position. I am certain that the noise is not from the front, and the front brakes have also been checked anyway and confirmed to be in a good condition. Could the problem be with the brake back plates? I am now getting paranoid about this squeal and dread taking my Opel out.

Charles Harrison

If the duration of the squealing noise is extremely short and only occurs as you press the brake pedal, then the noise may be due to the contact surface of the brake shoe rubbing against the back plate. This may be remedied by a coating of copper grease on the contact points.

However, from your description I feel that the noise may be more prolonged and is occurring from the contact between the brake shoe and drum. The only way the backplate would influence this noise would



be if the backplate were bent or distorted, allowing the shoes to sit out of line. Heavy corrosion may have weakened the backplate, but I suspect this would have been picked up by your garage already.

My feeling is that the noise is being produced by the vibration of the brake lining material itself, and it must be considered that this may be quite

old. In the first instance I would try putting a large chamfer on the leading edge of the brake shoes to allow the initial contact area to be larger and thus lessen the possibility of the vibration. If this does not have a positive effect, and providing the backplates are not excessively corroded, then I would consider replacing the brake shoes.

FORD CORTINA PITTING POINTS

I have a 1973 Ford Cortina Mk3 on which I have recently replaced the original Autolite distributor with a Bosch unit. I now find that after around 50 miles the points are pitting up. I have replaced the points and condenser several times, but the problem comes back.

I have also now replaced the alternator, plus the coil ballast resistor wire, but this has made no difference. When the points begin to pit, I then suffer from poor running problems and so am keen to get this problem rectified. I have made various checks to confirm the distributor is correct, but I am at a loss as to why this problem has now arisen only after the distributor was changed.

Stephen Reardon

A Excessive voltage can cause the premature pitting and although you have replaced the ballast wire, this only limits the voltage going to

the coil and does not control it. The voltage at the coil may still be too high, and this should be checked using a voltmeter with the engine running at about 2000rpm.

One of the main reasons for the higher voltage, providing the alternator output is correct, is that the earth return circuit back to the battery has a high resistance. One simple way to remove this from the equation would be to run a separate earth from the engine directly to the battery. If the problem still occurs, then other sources should be looked at.

As it is a new distributor which may have been coated at the factory with a fine film of oil to prevent it from corrosion, you should ensure that this is not the cause. A light film of oil on the points will cause the spark to arc across them, and this may well be the reason you are going through so many sets of points and why the problem was not apparent before the new distributor was fitted.



Got a problem with your classic? Why not email details to us at classics.ed@kelsev.co.uk and we'll try and help.

ROVER P6 NOISY COOLING SYSTEM

I have an annoying problem with my 1976 Rover 3500S which I am hoping you can help me with. Generally, the engine runs really well and is fine on short journeys. If I take the car for a run that is longer than around 30 minutes, when I stop, I can hear the coolant bubbling and I can see steam coming from the expansion tank overflow pipe.

I can see no obvious leaks in the cooling system and the temperature gauge is reading normal. I do have to top up the coolant at regular intervals, but this is not a great amount. I have checked the timing and mixture and I have carried out a compression test which suggests that all cylinders are equal and would hopefully dispel the possibility of a head gasket failure. The colour of the spark plugs also suggests an even burn of the mixture. **David Gray**

The first possibility is that the radiator's pressure cap has failed and is not retaining a suitable pressure in the system. This would be the first point to check. Providing this is OK and as you do not report a high pressure build up in the cooling system, then I would assume that the head gasket has not failed - it is likely that this would reveal itself after a shorter journey than 30 minutes.

I would though doubt the accuracy of the temperature gauge, and would suggest that perhaps the gauge is reading slightly low and that the problem is due to either a partially blocked cooling system or the thermostat which is not functioning fully. With this in mind I would check the thermostat, and at the same time take the opportunity to flush out the cooling system. I would add a word of caution though, as flushing the



The first check to make would be the pressure cap - is it sealing properly?

cooling system on a vehicle of this age may well highlight a few weak spots in the system that have previously gone unnoticed. It is also possible that at some point in the past an additive has been used to block up a minor leak, and this additive may be having an adverse effect on the system if it is blocking narrow passageways.

VW POLO

SECOND STARTER

I have a problem with my 1979 Volkswagen Polo 1.3 (HH engine code) which is baffling me, and one I would like to resolve before I begin to lose the patience of my parts supplier.

After a starting problem, I concluded that the starter motor must be at fault. I had already replaced the battery



The Starter is probably not the problem, this is more likely to be a poor connection on the cable

and checked the charging system, and so believed that the next step would be to replace the starter. This I did and the problem appeared to be fixed, but unfortunately four weeks later I once again had the same problems, with the starter only turning over slowly after the initial burst and then quickly reducing to such a pace that the engine no longer turned.

I returned the starter to the supplier, who filled out a warranty form for me and replaced the unit. Sad to say I am now back in the same situation because after a couple of weeks things are back to the way they were before the original replacement. I would like to hear your opinion before I go back again to the supplier.

Barry Stevens

I will first say that even if the two replacement units from the supplier were faulty, the chances that they would be displaying exactly the same symptoms as your original unit would be extremely low. Presuming you have checked the charging system and all is well, I suspect that the problem is more in the voltage supply circuit which is then disturbed each time you replace the starter.

I have seen dry solder on the large terminal connection fail which then provides a resistance to the starter. This may be temporarily rectified when it is disconnected, moved and then reconnected. By disconnecting the starter cable and checking the resistance with an ohm meter, you may well find that not only is there a high resistance, but by twisting the cable this resistance will alter. The other point to check would be the earth connections, although this is less likely as they would not be disturbed during the fitting of the starter.

TRIUMPH 2000 COOL RUNNING

I have a problem with the heater on my 1974 Triumph 2000 Mk2. The engine temperature rises to the normal running mark as it always has and the coolant does appear to be circulating as it should; this in my mind would indicate that the water pump and thermostat are fine. My problem is that the coolant does not appear to be flowing through the heater pipes, and even when the engine is up to running temperature and the radiator and hoses are hot, the heater inlet hose remains cold. I have already checked the heater valve and this is in the open position.

If I remove one of the heater hoses with the engine running I can encourage the coolant to flow through the heater, but after a couple of minutes this will go cold again, which indicates to me that for some reason the flow from the engine is insufficient to push the coolant around the heater. Any ideas of what I should do next?

Alan Winters

I would have said that the heater matrix had become blocked over time and this was the cause for the poor flow, but as you have confirmed that the coolant does freely flow through the system when one of the hoses is disconnected, this would not appear to be the case.

I would check that the thermostat you have fitted is set to open at 82°C and not the 74°C which is available; this slight difference may make an improvement. I would also ensure that the heater return pipe on the engine has been replaced with the stainless steel version. It may well be the case that if the old steel pipe is still fitted, this inside diameter has been greatly reduced by corrosion and deposits lining the inside of the pipe. This would have the result of reducing the flow sufficiently to stop the coolant travelling through the heater matrix and instead opting for an easier route.

Finally, it may also be worth checking the impeller on the water pump, just to ensure that this hasn't corroded away, reducing its performance. If all else fails I would recommend bleeding the system using a pressure tester to ensure any airlocks in the system are forced out.

FINAL CHAPTER?

Our restored Escort sets out on a journey to Wales, but not everything goes entirely to plan.

Report by Aaron McKay



Impressive boot space would be enough for two on a week away, let alone one long-weekender for a single journalist.

fter all the work we've done to this car, it was time for a proper road trip to put the Escort through its paces and finish up our mini-series. The idea was that we would spend enough time in the Ford to really appreciate its strong points and its shortcomings, maybe even get some evaluation from family members who'd long since moved onto

more modern cars. The plan was that I would head west from Peterborough, make a stop-off in Warwickshire, and then work my way through the increasingly hilly countryside towards Wales.

The comparative size of our Escort Mk3 in today's traffic would suggest that people really did have things worse off in 1981. How, I wondered, did we fit all our

luggage and passengers in back then? And more importantly, how was I going to fit everything in that I need for my planned trip cross country? Fortunately, as I opened the Ford's simple boot hatch, the suitcase in my other hand seemed to shrink. Making a mockery of its perceived compact exterior dimensions, the boot is as generous as anything in this class today so in went the









Early morning starts require some time for the Escort to warm up and demist.

suitcase, day bag, extended toolkit and a few other bits that, even if not strictly essential, might come in handy and would at least prevent the luggage from moving about in all the free space.

This left the passenger compartment free, apart from myself and a road map that would hopefully guide me to the final destination: the coastal town of Aberaeron in Ceredigion. Before that, I had a choice. Would I take the scenic route through Leicestershire and Northamptonshire or just hop on the A14? Unusually for me, I took the direct route for a chance to test the Ford Escort out on a bit of fast dual carriageway. Aerial up, the oldies playing just loud enough but not so loud as to distort the single speaker in the dash, I got to munching the miles. This also gave me time to think back over the restoration we'd carried out to bring this gem of a car to where it was now.

When we got the Escort it was a car in lovely original condition, but there were a few things that needed doing. The positive thing was that we had the opportunity to bring the car up to top notch condition without sacrificing much originality at all. During our first proper check-over, we'd set up the notorious automatic choke carburettor rather than replacing it, but found little else to tweak. The brakes were in first rate order, so we moved on to the natural upgrade for a car of this age: converting it to run on unleaded petrol. While at Q-prep for this work, the water pump and cam belt were also done.

With everything then put back together it was running smoother than ever, but the paintwork, while still eye catching, had a few blemishes of rust that kept it from looking truly tidy. So it went to Tiger Racing where the bodywork was rubbed down,



ABOVE and RIGHT: The impact was pretty much square on, so didn't appear to damage either rear wing.

a few plates welded in, and everything resprayed from the pillars down. Then, because the exterior was looking so sharp, we had to do something about the interior. While it had clearly been cared for, years of use had worked dirt into the fibres of the seats and carpets. A thorough valet at Petrolhead Detailing breathed new life and to be honest quite a bit of steam too into the old Ford's interior.

Now, the stunning condition of the car wasn't going unnoticed. As I was cruising along at an easy 65mph, one car lined up alongside, putting his overtake on pause so that an excited passenger could get a photo on his phone. As I glanced over, he was all smiles and thumbs up. This summed up the attitude of most on the A14 and M6 that crisp winter morning.

Before I knew it, I was leaving the M6 and heading due south through Rugby on the A426. Unfortunately, rather than the friendly nods and space afforded the Escort on the dual carriageways, the mid-morning traffic of Rugby was more aggressive.



Fractured tail light wasn't exactly to highway agency standards.

Aggressive enough in fact that the poor old Escort would not leave Rugby without a good deal of damage. We've all been there; an impatient, careless driver edging dangerously close to our prized classic. Normally you can just relax if they overtake or pull off. Sometimes it's even worth pulling over yourself. I wish I had. Instead, our distracted and spatially challenged Audi SUV driver smashed into the back of the Ford Escort as I was slowing down.

The damage to the Ford looked massive in comparison to the absorbed impact on the Audi's grille but, as I would note later, it was a pinpoint central impact – she hadn't braked or even begun to swerve. I knew immediately that this was the end of the road trip and that the car wouldn't be



To access his luggage from the boot, Aaron had to fold the rear bench down. Note that it stops on the rear door arm rests, requiring the doors to be opened to fold completely flat.



Some translucent coloured tape made for a decent temporary repair.

going to Wales. The first thing to do was to make sure that everyone involved was OK. Fortunately this was the case; even the kids in the back of the Audi were not much more than surprised at the impromptu stop at the side of the road. I grabbed my camera and took a couple of shots of each car, the road, and of both cars together these different angles are easy to forget in the heat of the moment, but can be important in later disagreements.

Taking a breath, I took a closer look at the Escort and thought: 'Yep, insurance.' It didn't seem that anything structural had been hit – the back panel and bumper had been pushed in a fair way, but not quite to the fuel tank. I picked up the loose pieces from the broken tail lights and put them in my jacket pocket, then went to the boot for the note pad in my day bag. But the boot wouldn't open, so I had to revert to the 21st century solution and use my phone. We exchanged details on the side of the road, a dead straight suburban section of the A426, and I wondered not only how on earth she'd managed to run into me, but also whether I could manage to get to my next stop off, with family nearby.

The car drove fine, but I don't recall ever enjoying the act of driving less than on those 10 miles out of Rugby. Once arrived at my folk's place, a breather with a cup of coffee got a plan together in my mind. Rather than being a flying visit, I'd stay



With red tape added where necessary, it wasn't fine art but at least it would see the Escort safely home.



Measuring up the passenger side was a bit more tricky as so much of the plastic had broken away.



Aaron needed three overlapping strips of the red tape (and three hands!) to effect a temporary cure.







With the broken taillights now sealed up with special repair tape and the lights tested, the Escort was closer to being ready for the journey home...

there the weekend and prepare the car as best I could for the drive home on Sunday morning - hopefully on nice, quiet roads.

First off, I needed access to the boot. Fortunately, the Escort's rear bench folds down easily enough, although curiously it requires both rear doors to be open to clear the rear arm rests. I could then extract my luggage and toolkit. With a keen hope that I still had something bought years ago, I rifled through the toolkit looking for the temporary solution to those broken rear tail lights up. My luck was in and I did indeed have a set of red, orange and clear translucent tape designed to cover broken tail lights. What were the chances of that?

I had planned to take my grandad out for a drive in the country to see how the Escort compared with the two later generations of Fiesta that make up my grandparents' two-car garage, but instead I enlisted his help with some repairs. Equipped with the tail light repair tape, scissors and a light cloth, we got to work by first cleaning the

dust from around the damaged area of the lens. Then we measured up the tape, cut it and removed the protective backing. The driver's side only needed a single piece of orange on the indicator and red on the tail/brake light, but the passenger side's unit had a good chunk of plastic missing - well, almost all of the red section was still in my jacket pocket. This needed some more thought. I'd need three lines of tape positioned vertically to cover the gap, so I started on each side and then carefully lined up the central piece.

Now we at least had tail light units that were mostly back to their original colours. A guick test of the lights, including brakes and indicators, and the Escort appeared ready for the drive back to Peterborough. But there was another thing that was bothering me. The impact had forced the centre of the bumper in, but the ends had splayed out and away from their mounting points. This meant that, on the driver's side especially, there was enough sticking out



...but the driver's side bumper end was now poking out dangerously and could potentially have scooped up small mammals and stray children.

to serve as a bit of an errant danger. While not quite as dangerous as an Audi Q5, we thought it best to tuck this potential weapon back in towards the car.

After some wrestling with string around the mounting point and the bumper, (a job best done with two pairs of hands,) we had the bumper's freedom successfully curtailed. We couldn't bring it back fully into line with the mounting point, but it would be good enough for the drive home.

Having become familiar with the amount of resistance put up by the bumper to our poor string, we decided we wouldn't be able to improve much on the passenger side. So we called the job a good 'un and on the Sunday I set off back to Peterborough. There were no further accidents, and in fact the car ran faultlessly, exactly as it had before. There was just the sad sense that the occasional appreciating stare had an element of pity as the damaged rear came into view. It didn't deter some people from tailgating on the





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String wrapped around the bumper and its mounting point as tightly as possible still allowed a gap, but it was secure enough for the drive home.



Damage can be seen at two points by the rear end of the spare wheel well, but the boot floor is repairable. The back panel that has been more seriously caved in will be replaced.

« A14 though, even on a quiet Sunday.

Back at the office, next on the list was to get a proper estimate arranged. With the insurance already notified of the situation, I took the car back to Tiger Racing where the bodywork repairs had been carried out so recently. Paul was good enough to give the car a look over while Jim made up a brew and we discussed what had happened, what needed to be replaced.



Fortunately the damage was confined to the rear panel and boot floor, and had not spread further into the structure. Thank heavens for small mercies.

and what could be repaired.

'You might have difficulty finding a back panel. We can fix it, but it would be much easier to replace,' they said. We also needed a new bumper and, of course, new tail light units, but the boot floor and the tailgate, those could be repaired. Also, Paul had pointed out as he looked in from behind the rear seats that the boot floor had taken punishment from the impact, in two places in particular.

We found a back panel at Magnum Classic Ford Panels, and with the bumper and tail light units widely available, it looked like it wouldn't be too difficult to repair the damage. The labour required for the job wasn't too steep either at around £800, although Tiger were probably being nice to us, so then there was the question in our heads: is it worth going through the insurance? This will be familiar to anyone who's been in a minor accident like this with a car that can prove to be inexpensive to fix. On this occasion we've decided to go ahead with the work outside of the insurance, and will bring you a final round-up of that as soon as it is completed. Maybe then the Escort will get its road trip after all, although you'll forgive me for CM taking the quiet route next time.



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CITROEN 2CV ENGINE REBUILD: PART TWO

The Burton Car Company shows how to reassemble a two-cylinder air-cooled Citroën engine. WORDS AND PHOTOGRAPHY: ROB HAWKINS

n the last issue of *Classics*, we followed the Burton Car Company stripping down a 602cc engine. This time, we're finding out how they reassemble the engine with new or overhauled components.

The lightness, compactness and simplicity of Citroën's commonly known 2CV engine perhaps makes it ideal to overhaul for a classic car DIYer. There are, however, a number of tools that can help save time and avoid disasters, many of which are available through the Burton Car Company in the Netherlands. And some jobs do require specialist tools, such as for assembling the crankshaft (should you need to dismantle it in the first place). In other situations, such as fitting the front and rear main oil seals, a suitable size drift is required.

Cleanliness is a top priority when it comes to assembling any engine, so make sure everything is spotlessly clean and that the workbench or area you are using for reassembly is also clean.





Reassembly of the crankshaft requires the two halves to be pressed together with new conrod bearings. The crank web in the centre is heated to help with fitting. Burton use a jig to assemble the crankshaft.



After fitting new front and rear bearings and the drive cog for the camshaft, fit the crankshaft into the right side engine casing with lots of engine oil (the right side also refers to the right side of the vehicle).



Fit the strainer plate into the engine casing half containing the crank and camshaft. Refit one of its 8mm securing bolts- the other will be fitted later when the two halves of the engine casing are put together.





The camshaft is fitted next, ensuring The camsnart is litted liess, such that the two lines on the side of its drive gear teeth line up with a single line on the crankshaft's drive gear, as shown here (inset). Add more engine oil for lubrication.



5 Manoeuvre a new on party Manoeuvre a new oil pump and gasket engine oil over the camshaft. Secure the oil pump with a couple of bolts threaded into the engine casing.



Refit the oil outlet plug that was 6 removed in step 21 of part one last issue (it was a 6mm Allen key plug). Fit the oil pump gear into the front of the oil pump (pictured) with lots of engine oil.





Apply a bead of sealant along the mating surface of the casing containing the crank and camshaft. Don't add sealant inside the holes for the casings' bolts and studs.



Carefully manoeuvre the empty engine casing half onto the one that contains the crank and camshaft and the sealant that was applied in the last step. Make sure that the conrod protrudes through the hole in the casing.



9 Refit the four large engine casing bolts first. After fitting them, tighten them to 20Nm. For older engines with large studs, tighten the nuts to 45Nm.



11 Check that the crankshaft can be rotated. If it cannot, dismantle the casings and check that all parts are correctly fitted and spotlessly clean.



13 Fit a new O-ring with lots of petroleum jelly or multi-purpose grease into the oil pump's cover. Fit the cover onto the oil pump and secure it with five 12mm bolts, progressively tightening them to 15Nm.







12 Fit a new sump plug with a new copper washer – hand-tighten it with a 3/8in ratchet. Gently tap the face of the oil pump to help locate it. Remove the two bolts locating the oil pump – the cover needs to be fitted.





14 Take the oil filter housing and fit a new O-ring, applying petroleum jelly or multi-purpose grease to it and the mating surface of the housing. Refit it onto the engine, using a new copper washer for its longer Allen key bolt and a steel washer for the shorter bolt. Tighten them to 18Nm.

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5 Add a smear of engine oil to the rubber seal on a new oil filter, then fit and tighten it by hand onto the oil filter housing. Adding oil to the seal will reduce the risk of the seal catching and tearing when tightening the filter.



Refit the oil pressure relief valve, adding engine oil to its piston. Use a new copper washer. Tighten the relief valve by hand using a 17mm spanner or socket there's no official torque setting.



Refit the camshaft followers with lots of engine oil. Make sure they are refitted in the same positions from where they were taken during the stripdown, with the flat surfaces touching the camshaft.



18 Apply grease to a pair of new front and rear main oil seals. Fit them in position on the engine, ensuring they are evenly seated. Burton have special sized tools to use as drifts and ensure they are correctly seated.



19 Fit new oil seals onto the ends of the oil cooler's pipes and apply lots of engine oil. Fit the whole assembly onto the engine and tighten the 16mm pipe nuts. Refit the top M7 mounting bolt and nut.





Apply lots of engine oil over each gudgeon pin and inside each conrod little end bearing, then slide the gudgeon pin into position. Block the adjacent hole in the engine case with a cloth before fitting the gudgeon pin's spring clip - if it falls out and into the engine, the engine will have to be dismantled to retrieve it.



Make sure the spring clip for each 2 Make sure the spring supple.

gudgeon pin has clicked into position and is securely fitted. Next, push each barrel down the long cylinder head studs and into position against the engine casing.



20 New pistons and barrels are supplied assembled with new piston rings, so fit each one over the corresponding conrod. Make sure an arrow on the top of the piston points to the front of the engine.



23 Take each cylinder head and fit the pushrod tubes with new washers, springs and seals (dry fitted). Ideally, a new set of pushrod tubes should be fitted, unless the old ones are relatively new.



24 Refit the cylinder heads onto the engine, making sure the pushrod tubes remain in position during the operation. Then refit the pushrods themselves, ensuring the larger end of each rod is fitted into the engine casing.



25 Refit the rocker shaft assembly with new washers (spring and flat) and a bush. Tighten the lower mounting bolts to 25Nm. Burton have a special socket for this, although a 6mm crow's foot can be used with a torque wrench.



26 Before fitting the three cylinder head nuts for each head, the heads must be lined up, so refit the combined inlet and exhaust manifold, securing it with new nuts and washers.



27 Refit the two upper cylinder head nuts that also secure the rocker shaft assemblies (the larger washer goes on the bottom). Refit the centre stud with thread lock. Progressively tighten all three to 10Nm, then 23Nm on each cylinder head.



Refit the rocker cover's mounting stud with thread lock. Fit and lock two M7 nuts onto the end of the thread to help tighten the stud in position, then release and remove them.



Check and adjust the valve clearances

Burton set them to 0.2mm for the inlets and exhausts, slackening the adjuster with a 10mm spanner and adjusting with a flatblade screwdriver. Finally, refit the rocker covers with new seals.



29 Fit a new oil feed pipe between the cylinder heads and the engine casing. The centre mounting bolt has an oilway, which is essential for cooling. Use new bolts and washers even if you are reusing the old pipework.



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BMW E21 3 SERIES

They say that imitation is the sincerest form of flattery, and BMW's E21 3 Series was such a hit that BMW themselves copied it again for the second, even more successful E30 generation. Here, we focus on the original.

Report by Andrew Everett

t's now 45 years since the original E21 replaced the much loved '02, itself one of the two ranges that saved BMW. The Neue Klasse (New Class) four-doors of 1962 had taken BMW in a whole new direction, directly towards the likes of Alfa Romeo - moderately expensive but well-trimmed and brisk sporty saloons with high quality running gear and engines capable of more power than the likes of BMC and Rootes. If those Neue Klasse 1500 and 1600 saloons sold well, the smaller two door 1600 and 1600Ti cars based on a shorter wheelbase version of the same platform did even better,

opening up the USA as well as Britain as big export markets.

The 1975 E21 3 Series was the next evolutionary step in the BMW master plan. Rivals Alfa Romeo and Lancia had both replaced their 1960s cars with bigger, heavier and more expensive models with much success, so BMW were going to do the same. The result was a car that was slightly bigger than the 2002, not quite as fast, not quite as good to hustle along but guieter, smoother riding, better on fuel and better looking inside and out, trading the somewhat boat like appearance of the 02 for something far more modern with a vastly improved interior.

If the monocoque bodyshell was all new, then so was the suspension although it followed the now standard BMW format of McPherson front struts and independent rear suspension with angled semi-trailing arms. However, the old steering box was replaced with a rack and pinion set up, BMW's first use of this steering medium.

Under the bonnet, BMW reused the good old M10 four cylinder engine, now 13 years old and thoroughly revamped for the E21 with fresh new combustion chamber and piston designs; the 1573cc version with 90bhp powered the two headlamp 316, and the 1990cc unit powered both

the four headlamp 109bhp 320 and the 125bhp 320i whose fuel injection system swapped from the 2002Tii's Kugelfischer mechanical system to modern Bosch K Jetronic. Gearboxes were all Getrag 242 four-speed units, with an optional ZF three-speed automatic and a five-speed close ratio Getrag available on the 320 and 320i.

Early road tests generally agreed that the E21 was a worthwhile improvement over the 2002, although there were some caveats over the handling behaviour; in early 1976 the spring and damper rates were revised, after which the car drove more like a BMW than ever before. The 316 was very





Interior trim is simple, but well made. This car has the three-speed automatic gearbox, an option that rarely gives trouble.

fussy and under-geared, while the 320i was very expensive at £4700 when a Cortina 2000E cost £3100. The mid-range 320 at £4000 seemed to offer the best value, a brisk, nice driving and very nicely finished 2-litre two-door in the same pricing ballpark as an Alfetta or a Beta and easily outlasting both in the longevity stakes.

The E21 would be forever light on options though; electric windows and central locking would never feature, and whilst a five-speed overdrive gearbox arrived late in the day, sports suspension and

a limited slip diff – as well as power steering later on – would improve the driving experience.

The first major change came in 1977 when the 2-litre M10 was replaced by the all new six-cylinder M60 unit, also 1990cc but smoother, bigger, heavier and thirstier than the outgoing four. Like the M10, the M60 (later renamed M20 for the 1982 E30) was a canted over iron block unit with an alloy crossflow head, single overhead

cam with inclined valves either side of the hemi chambers, but now a toothed rubber belt replaced the chain to drive the cam. There was no fuel injection version either as this was a carburettor-only model featuring a Solex DVG four barrel that was just a tad too big for it and did no favours for fuel economy. It sounded nice though, and it gave the 320 a more cultured long-legged feel, helped by the taller final drive

and smooth 122bhp.

Star of the show though was the new 323i, a 2315cc Bosch K fuel injection version of the new six with 143bhp, uprated suspension, better vented front disc brakes and rear discs replacing the drums, plus Capristyle twin exhausts for that He Man look. Options included Bilstein sport suspension and a limited slip diff which frankly should have been standard the basic 323i suffered from abysmal traction in the wet and very scary handling traits. Power steering, Recaro seats





 as a steel sunroof were robbed from the options list to make your £6500 323i a £7200 car, but still 500 quid less than the recently launched Porsche 924.

From here, changes were few and far between. The 1977 320's electric fan was quickly replaced by the same viscous coupled fan as the 323i, the rotary heater controls replaced the sliding levers in 1979 at which time there were changes to the trim. The 316 was given a boost in late 1980 when it was given the 318's 1766cc engine with a new Pierburg carburettor and an optional five-speed gearbox – the 320 and 323i began to be fitted with standard five-speed boxes for the 1981 model year.

All models had gained the 6in wide steel wheels on the 320/323i, and more trim changes occurred in late 1981. By 1982, the all new E30 was in the starting blocks and the E21 was gradually discontinued. But even after the E30's March 1983 launch, the E21 316 stayed in limited production until September 1983, selling alongside the new E30 version but at a cheaper price.

One other model of note is that Baur of Stuttgart launched a Cabriolet conversion in 1979, and quite a few were done using whatever E21 was delivered – most seemed to be the 320 model

BODY AND CHASSIS

The E21 may have been well finished, but the last one was built when Culture Club were still a thing. As a result, most have now long gone, with survivors either low mileage minters, previously restored or in need of a lot of work. The E21 can rust with the best of them – sills, rear arches, front wings, front chassis legs, boot floor corners, sunroof panel and jacking points as well as the rear axle mounting points, and the rear panel around the tail lights and boot seal. Front strut towers rarely rot, but rear ones can and you do need to check the inner wings where the front panel joins. Check also where the B pillar meets the rear wing as they can stress crack here. New panels are just about available, but are of course



Overall, it's a typical monocoque shell, nowhere near as rot prone as many other cars from the era and made of good enough steel to be relatively simple to repair, but it's only the 323is that are worth enough to warrant a strip down and rebuild. Doors and boot lids don't really rot, but the clamshell bonnet certainly can and really good ones are thin on the ground unless some enterprising soul begins importing panels from somewhere hot.

Good chrome bumpers are now a highly prized commodity and most original cars will need a replacement section or two if you want the car perfect. Be warned that a front centre section alone will cost in excess of £300, and just one bumper corner the same. Yikes!

ENGINE

The E21 has two engines, the M10 four and the M60 six. Starting

with the M10, this is often regarded as bulletproof, but it's not. As a new engine it was very good of course and given regular oil and coolant changes it would easily rack up 100,000 miles or more, but not many have been treated so well and with low gearing, the fourspeed cars work pretty hard. Common issues are corroded alloy head coolant passages that eventually eat into the head gasket fire ring, valve guide wear leading to a noisy top end and blue oil smoke on the overrun, and of course the favourite - camshaft wear.

This is caused by neglecting the oil spray bar. These need to be cleaned out by removing the oil supply banjo bolt, twisting the bar through 180 degrees and cleaning the holes out with a small drill. Enlarging the holes very slightly is

a good idea as it reduces the chances of blockage. The banjo bolt can (and does) come loose too, but you should NEVER add liquid thread lock as this will congeal inside and block the oil hole. Instead, BMW sell a new one for about four quid, dry thread locked and with a very slightly different thread pitch so it bites into the cylinder head more. Do this every time you adjust the tappets and the camshaft will live longer, sparing you an expensive and surprisingly difficult top end rebuild – getting the rocker shafts out can be a real mission.





a generally knackered engine, but can also be the tiny O ring on the steel pipe from the front oil gallery to the oil pump replacing that is a sump and front timing cover off job. A general thrashy rattle from the top front will be a worn out cam sprocket, very common on post-1980 1800 engines with the simplex timing chain. This is a simple and cheap fix though, as a new sprocket and a new spring in the chain tensioner will sort it, although some need a bit of packing behind the spring to tension an older chain. These chains are very tough though, unlike modern rubbish.

316 and 320/4 carburettors were OK being basically older 2002 type Solexes, but later Pierburgs from 1980 are ghastly things best replaced with a Weber. (We'll talk about fuel injection with the 323i.) Water pumps are reliable, as are the remote thermostats, and a well cared for M10 is a very good engine, if very reliant on good maintenance

The M60 unit in the 320/6 and 323i is equally good or bad. In the early days these were notorious for cracking cylinder heads, the crack occurring under the cam bearings and into the coolant passage below. This resulted in oil and water mixing, often misdiagnosed as a failed head gasket. These



Engine options were four or six cylinders ranging from 1573cc to 2315cc, with carburettor or injection.

heads – the same on both units – have a casting number ending in 200 and good ones are rare now. However, the later E30 320i M20 head will fit and the casting number ends in 731. It has the same valves and chambers but bigger inlet ports – the E21 inlet manifold fits perfectly though, and a complete E30 head fits straight on with the E21 cam pulley. Be aware that the E28 525e also had a 200 head with only four

of the bearing holes drilled. 1977-1981 engines had square tooth cam belts,

although BMW supply both. The same camshaft wear caveats apply, although the spray bar banjos are built in and far better. The bottom end rarely gives trouble.

The 320 uses a Solex 4A1 DVG quad choke carburettor that is as dreadful as it sounds and is very unreliable in old age and often impossible to fix; replace this with a 32/36 Weber. The 323i K Jetronic was also used on the original 320i and is good when it works, but parts are drying up. There also isn't much knowledge around now on this system, and given that you can buy a good complete post-1988 E30 325i engine with Motronic for around £700, it's often worth just

replacing the whole engine for this reliable 171bhp unit. The fuel pump sits next to the differential and the bird's nest of steel pipes can rust; again, it's often necessary to replace the whole lot.

The cooling system is simple, but requires a good radiator and viscous fan coupling if it's not to overheat. On the sixcylinder cars, fit a new water pump with every cam belt as they're only £40 or so.

TRANSMISSION

The E21 used a range of reliable manual gearboxes, both four and five-speed, and they are so tough it's not worth going into much detail. Remember that if you need to replace one, the E21 has a speedo cable drive and later BMW's such as the E30 do not so you need an E21 or E12 5-Series 518 or 520 box. Four and six-cylinder gearboxes do not interchange.

An internally collapsing clutch hose is a common issue leading to clutch failure - it will allow fluid through under pedal pressure, but won't allow it back fast enough, resulting in the release bearing overheating and seizing. A clutch is easy to replace and the parts are cheap enough, so replace the hose at the same time.

Propshaft Giubo front couplings and centre bearings

will be at the age where they may need replacing, but it's a simple DIY job. The ZF threespeedo auto is a good, reliable unit and very rarely gives trouble; an occasional change of ATF Dexron II fluid keeps them good. Differentials almost never give trouble, although 323i LSD equipped units are

SUSPENSION, STEERING AND BRAKES

The E21 suspension holds no particular surprises and it's the usual stuff – worn bushes, balljoints and dampers, none of which are very expensive of challenging to replace. The rear axle outer mounting beam bushes are bolt on, and whilst the front strut lower balljoints are too long to accept a regular balljoint splitter, a clout on the side of the strut with a steel hammer will release them

The brakes are more trouble, though. Early cars until August 1977 used twin remote servos and you won't find any new ones when the seals go and brake fluid ends up in the air chamber. Some owners have replaced these with new Lockheed MGB units with new brake pipes having metric unions one end and imperial the other, but really, replacing it all with the later single servo with combined master cylinder set up is a



calipers with rear drums on the sub-323i cars with manual adjusters that just love to seize solid – all in all, just normal old car stuff. The steering rack rarely gives trouble, although good used PAS racks are now hard to find with many too worn to even rebuild.

E21 suspension was always set up to be soft, but Bilstein still do uprated dampers to cut the pitching and roll.

INTERIOR AND ELECTRICS

In terms of electrics, the E21 has a simple wiring loom with decent connectors and very little to go wrong, certainly nothing that a bit of digging and a multimeter cannot sort out. Being old school Made in West Germany Bosch, stuff can last indefinitely although the hazard warning switch is a weak point – these were known to short out and as they are available new, it's worth buying a new one.

The interior trim is also simple and well-made, standard worn out driver's seat is a common problem. Correct cloth to repair one is now very difficult if not impossible to find, especially pre-1980 cars. Very often you will need to find a good passenger seat and use the covers from that. Recaro seats were a fairly common option on the 323i. but they're no worse to retrim than a standard seat to a good trimmer. Carpets are very tough and because there were only manual locks and wind up windows, there is almost nothing else to go wrong.

WHAT TO PAY?

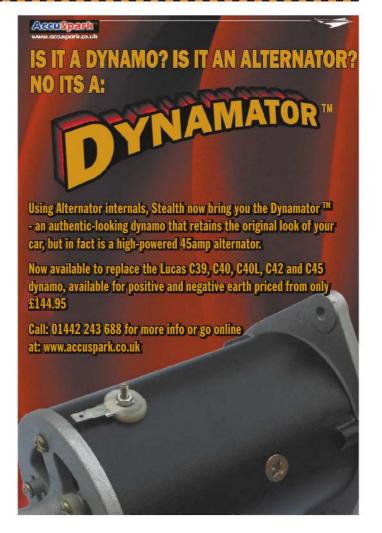
This is a tricky one. A really, really nice 320/6 will eventually realise about £10,000, a 316 a bit less. Early four cylinder 320/320i cars, never common when new, are extremely rare but not worth any more than a six-cylinder car. 323is are a lot more money of course, and the best ones are often found in Europe where there were more sold and are more proper unrestored gems – you'll pay £20,000 or more for one of those. In the UK, a really good 323i manual will make around £13,000, more for a car with a limited slip diff, Recaro seats and the sport gearbox.

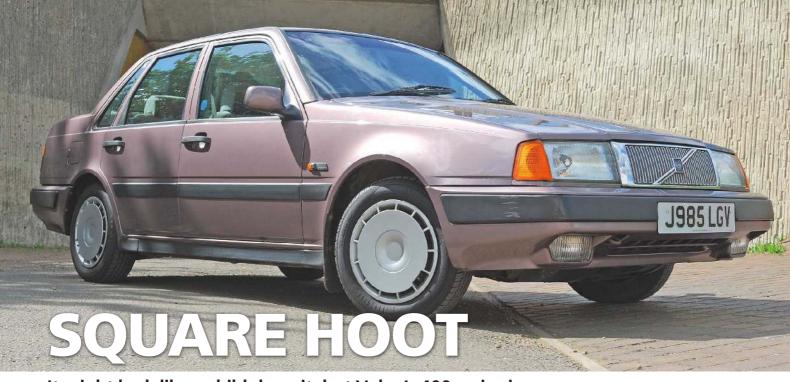
Baur Cabriolet models are harder to value, but as 323i's, they are certainly worth less than the hardtop saloons. CM











It might look like a child drew it, but Volvo's 400 series is a very grown-up car. Durable and very much of its era, it is both useable and enjoyable today. Report: Phil White

hey do things differently in Sweden, as Volvo's stand at the 1986 Geneva Motor Show proved. It featured a compact, four-seater sporting car with pop-up headlights and a liftback body. The 480 was distinctive, combining a low stance with some of the rugged looks that Volvo had made very much its own.

In some ways it trod familiar ground for the company, echoing the sporting brake style of 1971's P1800ES. Although more associated with hulking saloons and estates that looked as though they were built to survive a nuclear apocalypse, Volvo had also ventured into the smaller car market with its 300 series. However, the 480 was something of a revolutionary model in its own right: it was the manufacturer's first ever front-wheel drive car.

In this respect the 480 mapped out the way forward for Volvo. From then on almost everything it has produced has been either front or all-wheel

drive. A year after the 480's launch, its floorpan entered the range with a much more mainstream car atop: the 440 hatchback, followed two years later by its 460 saloon sibling.

Although these - collectively the 400 series - were a technological leap forward, they hid it well because the styling of these compact cars was designed to resemble their larger brother, the 940 saloon. This was a sensible move by Volvo, as the 940 was popular and the 400 was able to piggyback its reputation for solidity. When it was facelifted in 1994, the 400 series was restyled to resemble the big saloon's successor, the 850. Volvo's strategy paid off handsomely. The 440 and 460 sold well during a healthy model life of nine years. Thanks to the durability of a car built to survive winters north of the Arctic circle, it can still be seen on the road 30 years later.

The Volvo 400 series has a lot to offer. Its front-drive chassis endows it with decent handling, its engines are simple



Interiors were simply styled, but included plenty of equipment at all levels, with GLE and then CD spec being the most luxurious.

and easy to maintain and its bombproof build means that well-preserved examples can still be located at a price that will never be lower – Volvos attract fanatical and long-term owners who tend to maintain their vehicles with care.

Although actually built in the Netherlands (like the 300 series before it which had originally been designed as the Daf 77), the 400 series is a thoroughly Swedish car. Its specifications

include features such as adjustable seat belts with pretensioners and (from 1993) side impact protection that took a decade or two to become normal fayre elsewhere. Safety has long been Volvo's primary preoccupation. Most of its TV adverts in the late 1980s and early '90s featured crash tests, crash test dummies and products being driven off buildings at dizzying heights. Heated seats were also part of the package, something that still seems luxurious today.

At the heart of the 400 series was a range of engines obtained through Volvo's relationship with Renault, which lasted throughout the 1980s and '90s. Until 1992 several variations of one basic 1.7-litre, four-cylinder petrol unit were available, with outputs ranging from a





140mph may have been optimistic, but not as optimistic as most – a 440 Turbo was good for 124mph.

Styled to ape the bigger 940 and then later the 850 Volvos, the

relatively compact 440/460 still had ample seating for five.

carburettor-fed 77bhp to a turbocharged 122bhp. In 1992 options changed to a 1.6-litre giving 84bhp, a 1.8-litre that produces 89bhp and a 2.0-litre, 110bhp motor. In 1994 an 89bhp 1.9-litre turbo diesel was added to the list.

Three transmissions were available. Most 400s feature either a five-speed manual or four-speed ZF automatic gearbox. However, later cars also had the option of a modernised CVT system. Between 1972 and 2001 Volvo owned a proportion of DAF, the idiosyncratic Dutch manufacturer known for its small cars and its interest in rubber-band gearboxes. The transmission in the Volvo 400 series was an evolution of this. with steel bands running in oil.

As the 440 and 460 were intended to provide competition for the main players in the fleet market at the time, trim packages are many and varied – the status attached to trim level were of huge importance to fleet drivers, and Volvo paid great attention to this. There was

a definite hierarchy to the range: L and GL denoted basic equipment, GLE spoke of luxury, GLT was the badge of warm performance and Turbo spoke for itself. Confusingly, these were revised in 1994. Facelift models are badged S (basic), SE for the business motorist, Si for press-on drivers, GLT for performance addicts and CD for lovers of luxury.

In actual fact Volvo equipped its cars well at every level. One TV advert shows a thrusting, besuited young man looking wistfully at a passing 440 through the side window of his Vauxhall Vectra. He had good reason to. At the time the Volvo offered refinement far greater than the Vectra or the other main menu item. Ford's late-model Sierra. The 440 and 460 were better-built and equipped, quieter, more refined and – arguably – handled more competently. In addition, the passive and active safety built into a Volvo gave its occupants a far greater chance of walking away from a rush-hour pile up on the M4 near Reading. Many 400s had both driver and





Engines came from Renault, and ranged from 1.6 to 2.0 petrol units plus a 1.9 turbo diesel option. Power ranged from 77bhp-122bhp.

passenger airbags, and all had running lights.

It is 24 years since the last 400 left the factory, and despite being well puttogether the 440 and 460 are a rare sight on the road today. However, they are nowhere near so scarce as the Vectra or Sierra. They are also more distinctively styled and interesting, which is why we nominate them as classics of the near future. They are eminently practical vehicles to own, seating five in comfort. The 440's hatchback boot is useful, although the 460 saloon has decent luggage space thanks to 10cm extra body length. At the time the fleet market for relatively compact estates was lukewarm, so there is no wagon option, although an enterprising Dutch company did offer a glassfibre conversion kit.

A 400 can be run as a daily car, thanks to excellent reliability. Even the Turbo is a practical proposition. Renault may have little reputation where dependability is concerned, but one aspect of automotive technology it was an early master of was forced induction in road cars. Turbo problems are usually limited to failure of perishable items such as the hoses. Other problem areas are simple to fix: lower front wishbone bush wear. deterioration of boot seals, stretching handbrake cables and soft trim items coming unglued. The usual rules of common sense prevail when seeking out a 400: hunt for a car that has been owned by the same person for many years, has a steady trickle of maintenance receipts between its MoT certificates and a relatively recent cam belt.

Rot is unlikely to be a problem. The GLT, Si and Turbo models are most fun, although all 400s will be pleasant companions thanks to their decent equipment. You may need to take time seeking one out however, as Volvos are often lifetime companions.

Prices vary according to mileage and year, but £1000-£1500 will secure you a good example, while up to £2000 can buy a nice, low-mileage GLT or Turbo. This is money well spent as the 440 and 460 are typically Swedish: serious yet enjoyable to be with, eminently practical yet quietly radical. Doing things differently rarely makes such sense.



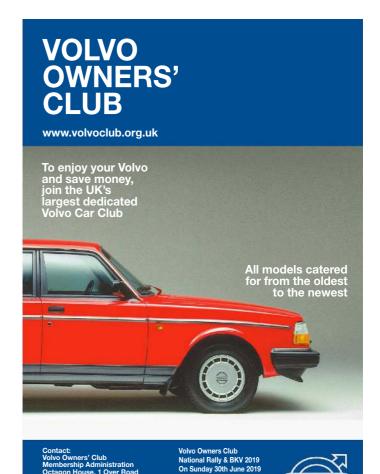
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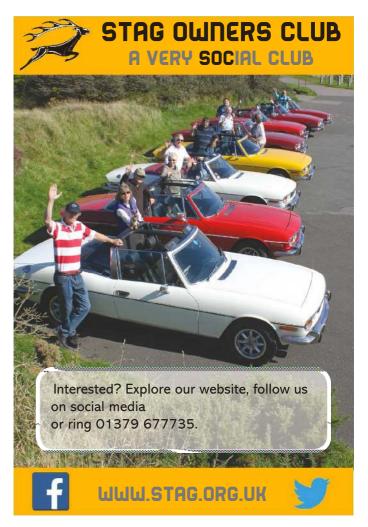


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THE FIRST MODERN FAMILY CAR?

The Austin A40 Farina was mechanically unadventurous, conceived with no sporty pretensions and aimed squarely at the undemanding family market. It was at best a stop gap before the revolutionary transverse-engined FWD packages from Sir Alec Issigonis showed the world the way forward. However, industry insider and former Rolls Royce and Bentley Chief Stylist Graham Hull finds much to admire about its styling and engineering.

Words and drawings: Graham Hull

he 1958 A40's family tree began with the 1922 Austin Seven, a basic 2+2 transport intended to get the masses mobile. The little Seven's final form before WW2 was the Ruby, an attempt to dress the charming Box Saloon in a cloak of rather gauche modernity which candidly didn't bode well for the future.

A sea change after the war saw motor manufacturers casting eyes across the Atlantic for aesthetic and engineering inspiration – hence the popular Austin A30 launched in 1951 at Earl's Court as the New Austin Seven. It adopted a kind of miniature Americana style, and the traditional separate flowing wings of the coachbuilder's art were reduced to shallow basrelief echoes of their former grandiose flourish, while a dummy radiator shell gave but a nod to tradition.

The A30's engineering design was, to a degree, more interesting, abandoning a separate chassis for a monocogue and introducting the redoubtable overheadvalve A-Series engine, albeit in its early 803cc form. It had independent front suspension too, but disconcertingly only sported front hydraulic brakes because at the rear there was an unnatural coupling of hydraulics and rod via the handbrake linkage. Rear suspension was a leaf-sprung

live axle with lever dampers and anti-roll bar. Lever dampers formed the top front suspension arm with a pressed wishbone lower arm.

The 1956 Austin A35 gained a 948cc A-Series, larger wraparound backlight and remote gear-change, while semaphore indicators gave way to four flashers. The van version (as espoused by former F1 World Champion James Hunt and later Wallace and Gromit!) lived on until 1968, a year after the A35's replacement had ceased production. That replacement was the A40 Farina, the subject of this feature.

The A40's mechanical hardware was carried over from the A35, but with an

increased wheelbase and track. It is only when you compare the A40's styling and design to the A35 (or indeed the Morris Minor) that it may become clear why I personally rate the newcomer so highly on the evolutionary scale of design styling

Pininfarina – Styling Design

Post-war, the Italians were considered the European masters of car styling/design. Their overall influence is unquestionable, and Pininfarina was probably the best. The British attitude to in-house styling was ambivalent, and although the coachbuilt tradition was ingrained, even the proudest – Rolls-Royce –





Mkl cars inherited the A35's instrument cluster, but the Mk2 A40 Farina got a more modern style fascia – including an indicator stalk!

turned to Pininfarina in the late 1960s for their Camargue. The British Motor Corporation (BMC) in the mid-1950s commissioned Pininfarina to re-body the A35 which, whilst cute, was essentially a shrunken version of the A40 Somerset and A70 Hereford.

The Farina A40 that emerged

in 1958 summons little visual drama these days, but at its launch it was seen as different, radical and quite daring. The 1959 Observer's Book of Automobiles described its appearance as 'unusual,' and even in 1967 still commented: 'Note general van-like appearance.' It was 41/4in



The influence of the A35's grille is seen in this early proposal. It also looks remarkably like the later MG1100 and VdP Allegro!

(109mm) wider than the A35, 7¾in (200mm) longer, ½in (63mm) lower and weighed 1 cwt (50.8kg) more.

Believe it or not, the modestly sized A30/35 had been available as a four-door, but the A40 was always a two-door. The A40 Countryman version had a split tailgate and some claim to being the first production hatchback, while the Innocenti version built under licence in Italy did offer a true one-piece tailgate.

A30/35s were a three-box shape, but the A40 was emphatically a two-box design. Apart from the fresh two-volume architecture and novel tailgate, Pininfarina boldly employed other trend setting design themes. Headlamps were positioned at the front of a strong waist shoulder that ran through to new vertical tail lamp clusters which were a significant improvement over previous 'off the shelf' round units, for example.

Aiding aerodynamics, the wraparound windscreen was unusually deep and the roof fell away from the screen's high peak. The trailing edge of the roof ended in a pronounced brow over

the backlight, a feature no stranger to modern cars. The radiator grill abandoned tradition and was a rippled, bright, horizontal element butting up to the headlamps. All body surfaces were free of extraneous features such as wheelarch eyebrows, with just a chrome strip running over the front wings and doors. These smooth, plain sides rejecting virtually any cosmetic artifice demonstrated Pininfarina's aesthetic authority, bringing to mind certain cars from much later years. The A40's overall effect was a simple, elegant shape owing little to anything that had gone before.

Interior

The interior was uncluttered, light and airy, achieving maximum visual space despite a modest cabin width. This illusion was aided by a full-width under-facia parcel shelf and no console filling space between this shelf and the floor. The painted facia used a carry-over A35 instrument cluster, and even the somewhat archaic large Bakelite non-cancelling central indicator switch. Overall it was far removed from today's

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feature rich-offerings, but it
 was very practical and easy
 to understand. Fold-away
 rear seats created a large
 estate type platform, ideal for
 use in conjunction with the
 Countryman tailgate version.

Anti lozenging tactics

Structurally, hatchbacks are a challenge as monocogues need every area contributing to overall rigidity. The hatchback is a box with an end missing - see how floppy a cornflake packet is once it has been opened. Pininfarina, before computer load-modelling, threw every stiffening feature into the A40 Countryman's rear aperture: deep trailing roof section, substantial seal land/ gutter frame and triangulated lower corners. As a result, the A40 felt strong and rigid.



Before good aerodynamics became marketable, the Motor Industry Research Association (MIRA) published comparison Coefficient of Drag figures for a whole range of cars. The E-Type Jaguar achieved Cd 0.44 and the A40 Cd 0.37. This blanked-radiator testing of 118 production cars was a smart move on the Association's part, focusing as it did most manufacturers on wind-tunnel experimentation programs — often using MIRA's facilities!



The extended wing line and upright rear lights helped disguise the van-like shape viewed in profile.

MIRA's top ten list caused some disquiet, and even controversy, provoking journalistic grandee LJK Setright to guery the results. The Porsche 356C was best, closely followed by the Citroën DS19 (post-1964). The Bristol 402, Aston Martin DB6, Saab 96. a Ginetta and Daimler SP-250 Coupé were all in the virtuous line up too, but third was the apparently boxy Alfa Romeo Giulia Ti with Cd 0.341. Robert Cumberford in Car's December 1978 issue wrote:

'Not so offensive to Mr Setright because it was listed after the Bristol, but also somewhat surprising in its aerodynamic effectiveness, was Pininfarina's Austin A40, the archetype for today's crop of supermini two-box saloons. The Austin's virtues are not so easily discerned as the Alfa's, [MIRA had included a nine point lowdrag guide] but I'm inclined to think that the long, sharply cutoff roof accounts for reducing turbulence, and because there is not a great deal of wetted area and that area is plain, turbulence was not generated on the sides either.'

Tom Karen of Ogle Design, an occasional tutor at The Royal College Of Art (RCA), pointed out to us students that the A40's bonnet, being sunk down between the front wings, was a clever approach. It minimised aerodynamic drag by getting the front as low as possible, but left the headlamps/wings high and avoided the bonnet panel having to line up as in an unforgiving typical four-sided aperture.

The MIRA list surprised

everyone except Pininfarina, who knew what he was doing with the low bonnet, smooth sides, roof profile and abruptly cut-off tail. In the real world Cd and frontal areas (CdA) cannot be separated, but the little Austin's tightly packaged headon aspect scored here also.

A40 Mk2

Obviously pleased with their vehicle, BMC in 1961 brought out an A40 Mk2 with the rear wheels moved back 31/2in (90mm) mainly to increase rear legroom. The front grill was pulled forward about 2in (50mm) and became fullwidth, encompassing the lamp units. This ploy visually lowered the car's frontal aspect. A 1098cc A-Series was implanted (from 1962), a front anti-roll bar added and the A40 was even treated to full hydraulic brakes at the rear. The Mk2 was a genuinely enhanced product offer, an excellent car made better.

Other changes included a revised facia with a crackle black finish, a new strip instrument cluster, indicator stalk and featured heater

The MkI got a horizontal mesh grille in front of the radiator, but it stopped short of the lights placed in upturned teardrop housings.

66 Somewhat surprising in its aerodynamic effectiveness was Pininfarina's Austin A40



A wood veneer facia and twinhumped top roll offered a hint of modernity — and even sophistication — for the later 1960s 77

controls, the final version having a wood veneer facia and twin-humped top roll offering a hint of modernity – and even sophistication – for the later 1960s.

Testimony

On holiday in the 1960s, our 425cc Citroën 2CV's mechanical fuel pump failed. Leaving it at a garage to be fixed, we hired a maroon A40 Mk2. Talk about chalk and cheese! But we liked it, and later collecting our deliriously happy Labrador from the kennels she instinctively took up station behind the back seat. Shortly afterwards we needed a second car, and someone in the nearby Millionaires Row (aka Totteridge Lane in North London) was selling an A40 Mk2. The owner drove a Bentley S Type, only using the Austin to carry a lawnmower to his mother-in-law's, and this black over red example was in perfect condition, with the desirable countryman split tailgate and opening rear side windows. Both Mk1 and Mk2, although available in single body colours, benefited from a contrasting roof, usually black or occasionally lighter shades. Production doubtless grumbled about having to create a demarcation line on the A-post top, but dual-paint became an A40 characteristic, while combinations such as black over Tartan Red continued as a Classic Mini favourite.

We used the A40 a lot, and when my Mini Cooper was stolen, I inherited the Austin, using it for journeys between London and Rolls-Royce's Crewe factory in the 1970s. Probably due to good aerodynamics, it was quite happy cruising on motorways returning something over 40mpg. (Road tests quoted a 75-80mph top speed.)

Ideally Austin should have connected the steering wheel to the front wheels via rack and pinion like the Morris Minor because the Austin's inherited worm and peg system could

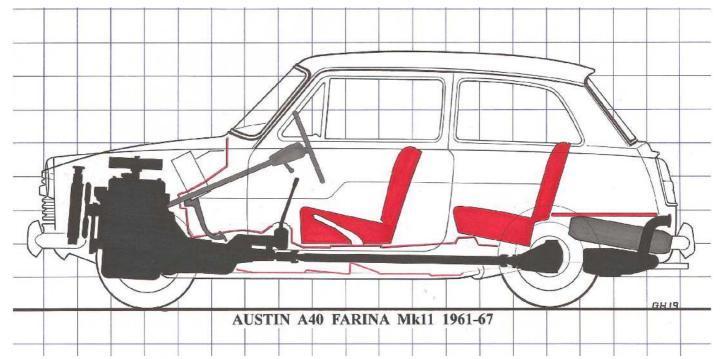


The Mk2 featured a revised nose that featured a full width grille, which visually had the effect of lowering the car's nose.

feel a trifle vague (although light for parking). The rear load platform was first-class, and on one occasion a complete Mini engine/gearbox unit weighing about 2½cwt (127kg) was craned into the back and taken from Crewe to London for a project. The spare wheel was extracted first from under its trapdoor, but whether the single-position side-jack could have lifted such a load

in the event of a puncture is debatable.

A useful contact at the Rolls-Royce factory gave the A40 Tartan Red a superb respray as cellulose red paint of this era (and later) tended to fade, but the black roof just needed a cut and polish. When eventually advertised in the *Crewe Chronicle*, the locals queued up as they recognised a nice example of a good car.



Despite having a longitudinal engine and rear wheel drive, the packaging provided as much space as possible in a modest footprint.

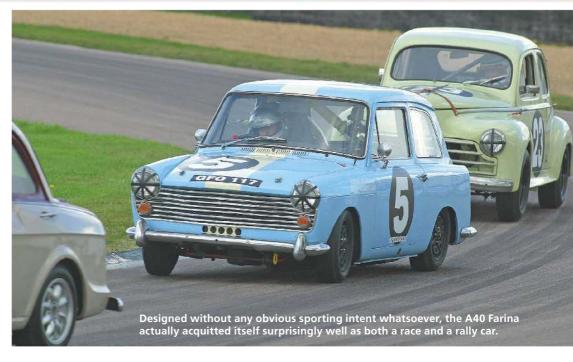
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« In conclusion – the A40's impact and import

We are used to new cars replacing the old, but BMC/ BLMC were apparently happy for the new and the old to live side by side. The A35 van as mentioned actually outlived the A40, while the Issigonis Austin/Morris 1100 launched in 1962 ran alongside the A40 for five years. Despite Issigonis being notoriously negative towards styling per se, he allowed the A40's body shape to be stretched, squeezed and pulled to coax it around his transverse FWD packages - the Mini, 1100, 1800 and Maxi all carry the same features of shouldered waist line and similar two-box approach. The 1100 in particular echoes the A40's style, albeit 31/2in (89mm) lower with a shorter bonnet. The Mk1 A40's rippled grill theme was used pretty much across the board.

So is the Farina A40 a true classic? Well, it was a trend setting two-box shape, pioneered the hatchback (particularly the Innocenti version), achieved one of the best Cd numbers of its day and to some extent aesthetically influenced several subsequent BMC/BLMC cars. Opening with the possible premise that the Farina A40 was the first modern family car is admittedly quite a reach, but



this fan would suggest that the Mk2 version in particular did advance family car design and while it employed tried and tested conventional mechanicals, its economical 1098cc unit was not fazed by motorway demands.

Its style arrived at by Pininfarina, an acknowledged master of his art, was a restrained form echoed later on such as the Citroën GS. With no trace of retro or Americana in a clean, elegant shape, it possessed world class aerodynamics. It was a low-key vet influential thoroughbred which, in its modest way, was a key element in the move from three-box shapes to two and arguably the origins of the modern family car. (Later in my career I worked at Pininfarina on limited production Rolls-Royce and Bentley projects, and found Sergio Pininfarina to be a gentleman. Sitting opposite him for a meal, he probably expected me to talk about Ferraris and so on. Instead I mentioned our A40 and he beamed with pleasure.)

Incidentally it also carried on the A35's excellent race track record with one Doc Shepherd's A40 holding the Brands Hatch saloon car lap record in 1959. Graham Hill's Speedwell A40 famously overtook Dickie Stoops' (10 times Le Mans entrant) Porsche 356 at Oulton Park's Knickerbrook, plus Pat Moss and Ann Wisdom did rather well in the 1959 Monte Carlo Rally in theirs.

The A40's popular persona led BMC to look again to Pininfarina for a similarly tasteful body language for the ADO16, the resulting Austin/ Morris 1100 – and somewhat kitsch variants – being the UK's best seller for most of its 1963-1974 production. Today, for a perfectly useable, easy to work on, straightforward classic with excellent heritage, the Farina A40 remains a very attractive proposition.



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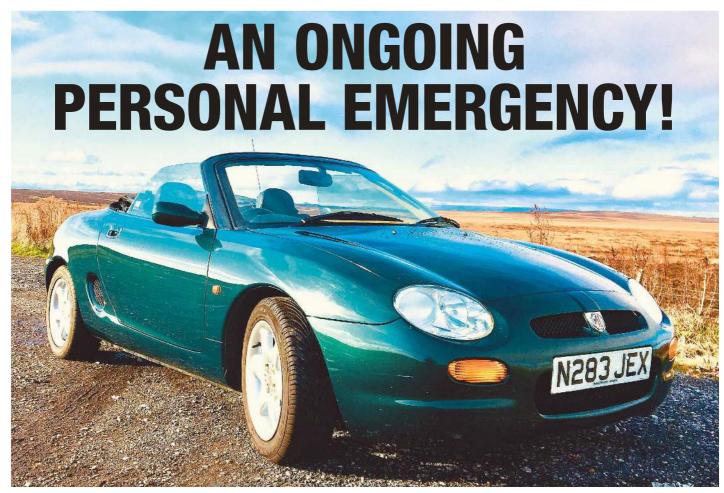
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Jerry Youle decided that if he was going to have a mid-life crisis, he was going to go the whole hog and get a car that has no roof, only two seats and an engine with a dubious reputation tucked out of sight in the middle. Yes, it could only be an MGF.

ow I've reached my mid-50s, it seemed I should have a mid-life crisis – or as a newspaper recently put it 'an ongoing personal emergency.' Either way, after a lifetime of driving Astras and Zafiras for sensible family reasons, it seemed reasonable to do something not entirely sensible. But only in a relatively cautious way, which is why I was thinking about a two-seater convertible, so long as it was for less than say £3000.

So why an MGF/TF rather than the clearly more sensible MX5? Three reasons, really. Firstly at 6ft 2in I just don't fit into an MX5. Secondly, MGF/TFs look nicer – they just do. And thirdly, if the desire is to do something not sensible, then why not embrace this by buying a car with the engine in the middle where no-one can get to it...? Buying an MGF also links rather nicely with my first

car, a Rover Metro, which had the same subframe (albeit the other way round) and Hydragas suspension that died out years ago. It's rather endearing the way Rover liked to recycle.

So for the last three years I've been playing a family game. I keep suggesting the time is now, and my wife keeps reminding me that 1) we already have a perfectly good car, 2) we'd never use a car with no roof and not enough seats and, 3) why don't you just wait until you've retired?

All of which were inarguable points which held sway. So I just spent my time gazing aimlessly at classic car magazines and pointing at MGF/TF specialist Trophy Cars every time we drove past it on the A1. But then, out of the blue, we had the chance to buy a 1996 MGF from a relative. Even better, it was in British Racing Green, had spent most of its life in a garage



There's no engine under the bonnet and no room for luggage either, but at least this early example still had a full sized spare wheel fitted.

and had done a ludicrously low 16,794 miles – that equates to just 730 miles a year. It was too good to turn down.

Before viewing the car, my main worry was that the driving position would be uncomfortable because the steering wheel is not adjustable. To be frank it is a bit low, but my legs go either side of it (just), and with the seat pushed as far back as it will go, it sort of feels OK. The main surprise,

READERS' CARSA MID-LIFE CRISIS MGF



An uneaten piece of cake from the MGF's first birthday celebrations at Gaydon in 1996 – mmm mmm!

however, was the lack of power steering, an optional extra (at £550) in 1996 which was spurned in favour of a walnut veneer fascia kit which cost a rather extraordinary £317. The unassisted steering is extremely heavy at slow speeds and something of a shock. Pulling out on the test drive, I nearly ended up in a hedge because the steering wheel seemed to have been glued into position. I can see why power steering has caught on, but above 5mph it does start to feel more normal.

The metallic paint was a good original buy though at just £230, and it still looks fantastic today, perhaps because my sister-in-law had spent rather a long time patting it with lumps of clay. Back in 1996 all this added up to a pricey £17,133 on the road, which seems rather a lot to me (even in 2019). But then again, I am coming at this from a rather sensible place.



Original owner passed up on the chance of power steering, opting instead for some bits of fake wood trim.

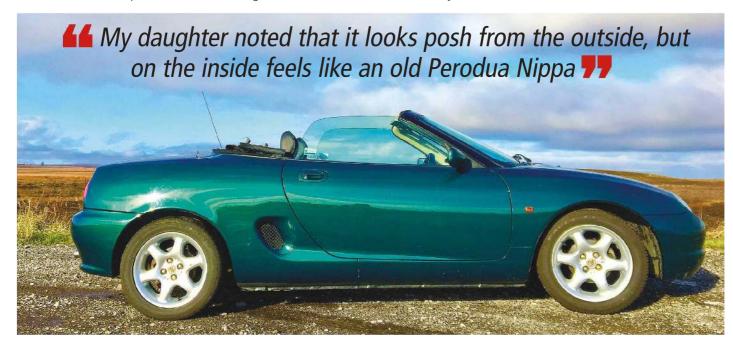
My other worry was how the car would cope on its longest ever journey, from rural Wiltshire to its new home in Sheffield. In fact it was fine, and the 200 miles were done with the top down on just half a tank of petrol. That said, driving up the M1 was something of an experience, being caught in a middle lane canyon between HGVs and enduring industrial level noise from other vehicles while sitting in a vortex of

swirling air at 70mph.

The car is now adjusting to a more robust urban environment in the north. Family reaction has been mixed. My son finds it rather amusing and quite difficult to get into. My daughter noted that it looks posh from the outside, but on the inside feels like an old Perodua Nippa (and she should know because we had one once). I thought her view harsh, but reasonably fair if we set

aside any sentiment. Neither of them find the MG cap which came with the car remotely acceptable, even in a post-ironic way. However, my children are both younger than the car, so they don't have the perspective to know any better.

In fact, the inside is rather nice and the black and green seats are grippy and comfy. The car also has the original MG radio cassette player which sort of works – it comes on with



READERS' CARSA MID-LIFE CRISIS MGF





be turned off. I think I still have some cassettes somewhere, and it will be nostalgic to hear them getting mangled within the mechanism.

One rather nice thing is that the car comes with an extensive collection of paperwork. This is heavy on MoTs and perhaps a little light on services, but then it's not actually done many miles. From the midst of this collection come some interesting historic facts. For example, in August 1996 the car (yes, the car, not its owner) was invited to the first



birthday party of the MGF at Gaydon. The invite says, slightly cringingly, that 'humans in your family may also wish to come on the day out.' We know that the MGF and some humans did go, because an uneaten individual portion of MG birthday cake came with the car. Nice.

Some time around 2010, concern must have spread about the K-series engine's fragility because a rather large sum was spent on fitting stainless steel coolant pipes, a new head gasket, bolts, thermostat, water pump and cam belt. All very sensible. Which makes it seem odd that just three years later an even larger sum was expended on fitting a reconditioned replacement engine. At the same time work was done on the oil and coolant temperature warning systems. I understand that the engine had 'blown up,'

which may be a technical term. The reconditioned engine has only done 3000 miles.

The final snippet comes from a copy of the original owner's customer feedback after taking delivery. This praises the 'precision of the steering' (stronger arms than mine then!), the 'brilliant and exactly right level of suspension' and 'the ease of hood operation.' However, it should be noted that this was from someone whose other car was a 1931 Alvis, so the contrast was probably quite marked.

This positivity was tempered by a quibble about the predelivery inspection process given that the brake lights were permanently stuck on. The dealer initially advised that this might clear itself and it is noted that the defect was only grudgingly rectified after

protracted communications and the involvement of the AA – a sign perhaps that MG-Rover was still struggling to throw off the customer care and reliability problems of the British Leyland years.

So this is where things are now, a few weeks into ownership. I'm the owner of a very old car in rather extraordinary original condition (except for the engine). I'm slightly worried about the winter months given the small holes in soft-top, but I have bought a car cover. I also need to decide which MG owners club to join, when it should next have a service, can I face a classic car show and whether anything can be done about the small hole chewed by mice in the carpet in the boot. And, last but not least, how much does it cost to fit power steering?

66 Neither of my children find the MG cap which came with the car remotely acceptable, even in a post-ironic way. 77





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PRESS PICTURES A-Z

For our third trip down memory lane with evocative and atmospheric press photographs from car manufacturers through the ages, Simon Goldsworthy samples a small selection from I for Isetta through to L for Lincoln.

ISETTA

We've included this under I for Isetta, but we have to come clean and admit that we believe this is a 1955 press photo from the launch of BMW's version. The Bavarian company built the Isetta under licence from 1955 until 1962, churning out no fewer than 161,728 examples of the ultracute bubble car. The young lady is beautifully attired for a day on the water, though her companion does have a rather dubious taste in socks. Unfortunately we do have our doubts about the staging and exactly what the ad team are trying to suggest - while we can just about accept that the Isetta could be driven with a paddle poking out of the sunroof, where the heck did the canoe come from?



INNOCENTI

If the Margues and Models feature in this issue piqued your interest with its mention of an Innocenti version of the Austin A40 Farina, then here is an interior shot of that very model. This was the first car produced in conjunction with BMC/BLMC, though later offerings included the Mini, Allegro and a Sprite-based GT/Coupé.



▲ ISUZU

Bonus points to anybody who recognised this as an Isuzu Florian Deluxe, pictured in its launch year of 1967 at, we believe, the Tokyo Motor Show. Production continued until 1983, by which time the 1600cc engine had grown to 1800cc.

ARCHIVESPRESS PICTURES A-Z



■ JEEP

We Brits like to think that the Range Rover started the trend for luxury 4X4s, but Jeep had already been building their Wagoneer since November 1962. Although it sat on a truck chassis, it was definitely more family wagon than commercial vehicle. Front disc brakes were finally an option by the time this 1975 model year example was produced under American Motors Corporation ownership – AMC acquired Kaiser Jeep Corporation in 1970. Chrysler bought AMC in 1987 to get their hands on the Jeep brand.

JAGUAR

This photo was issued to show the original and the latest offerings to be connected with Jaguar, and since that is an XK8 in the background we'd suggest it was taken some time around that model's launch in 1996. The sidecar in the foreground does not bear the Jaguar name of course, but is product of the Swallow Sidecar and Coachbuilding Company founded by William Walmsley and William Lyons. That company morphed into SS Cars Ltd, and after WW2 to Jaguar Cars Ltd.



JOWETT

The Jowett Bradford was essentially a van adapted for private use with windows and extra seating. Built until 1954, parts of it dated back to before the First World War. It was powered by a 1005cc flat twin engine, though with just 25bhp perhaps the term 'powered' is a trifle optimistic. They were incredibly durable though, and inspired a devoted following. This is a 1948 vehicle in Shell Oil Co livery.

JAGUAR

We are returning to Jaguar for our final offering under the J banner, this time to see William Lyons proudly showing off the new E-Type in 1961. There is scarcely a motoring accolade that has not been bestowed on the E-Type since then, and it is one of the few models for which the term 'iconic' is not hyperbole. Given that, it is incredible to think that when production ended in 1975, dealers struggled to shift the final examples of what was seen as yesterday's car, and for some time afterwards you could pick older examples up for relative peanuts. Where's a time machine when you need one?



ARCHIVES PRESS PICTURES A-Z





KORAL

We must admit to being a little confused as to just where to place this

image. The car was marketed by Innocenti, but was clearly a Yugo underneath, which in turn could have gone under the Zastava banner! However, we've plumped to put it under K because as far as we can tell, it was marketed in Italy as the Koral Cabrio. The car was itself based on Fiat designs and powered by their tried and tested 903cc engine in Koral 45 spec, or the 1.1 unit from the Fiat 128 in the Koral 55 version. It sold enough to wash its face because it was so cheap.





KIA

We haven't managed to find much background to this one, so please do write in if you can help flesh out the details. It is the Kia KMS III, which was a concept car displayed in 1997 at motor shows in Frankfurt and Seoul, but which never made it into production. That is a shame because while the Kia Sephia on which it was based (produced in two generations from 1992-97 and from 1997-2003) was forgettable, this looks pretty good!

KAISER DARRIN

This curious beast looks like the door has fallen off, but in fact it is designed to slide forwards into the front wing. The fibreglass oddity was built for 1954 by Kaiser Motors, but only 435 production cars and six prototypes were completed before the project was canned.

KAISER

More successful for Kaiser was their Henry J model, introduced in 1950 for the 1951 model year. Even that was not a huge success though - despite being aggressively priced, sales struggled to reach a level that made it profitable and the model only lasted three years.



PRESS PICTURES A-Z



LADA

Those who know my own predilections in the classic car world won't be

surprised to see a Lada slipped in among the Ls. This 1993 example is in fact a Riva 1.5, still based on the Fiat 124 of 1966-1974 vintage. By this time the Russians had tried to meet the European requirement for catalytic convertors while sticking with a carburettor rather than switching to fuel injection. It was a disaster, and I can speak here from personal experience! UK Lada sales declined sharply, and finished in 1997.

LANCIA

This magnificent beast is a Lancia Flaminia Convertible. The original Flaminia was designed by Pininfarina, but the twin headlights mark this out as the version designed and built by Carrozzeria Touring from 1960-64. Like its GT coupé cousin this was strictly a two-seater, though Touring did also produce a slightly longer GTL version of the coupé that offered 2+2 seating. Always an expensive car to build, the Flaminia proved to be something of a dead end for Lancia and comparatively few were sold.

■ LAND ROVER

Land Rovers might be an unexpected highlight of the Goodwood Festival of Speed, but this cavalcade of 70 examples paraded up the Hillclimb in 2018 to celebrate 70 years of the marque. The largest ever batch of vehicles to drive up the famous hill was led by a recreation of the very first Land Rover – a Centre Steer prototype – and HUE 166, the first Series I pre-production prototype from 1948. Series I, II and III vehicles included fire engines, SAS vehicles, aircraft crash rescue and African expedition heroes, while all four generations of Range Rover also featured in the convoy.



LINCOLN

This pair of Lincoln limos outside the White House would appear to be ready for a presidential parade of some sort. Although the dates on the plates suggest 1950, that looks on the left to us like the 1939 Sunshine Special built for Franklin D Roosevelt. It remained on the presidential fleet until 1948, while on the right we'd hazard a guess at the Lincoln Cosmopolitan, perhaps one of nine built for President Harry S Truman in 1950. Would we put money on any of that being correct? Probably not, but we'd have a small flutter on one of our readers being able to tell us more.



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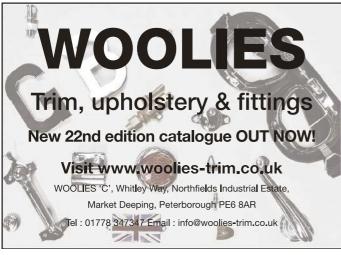
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BMW

318 TI COMPACT



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635 CSI



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£15,795. California black plate, sweet engine and gearbox. New shocks, springs, exhaust, two sets keys, nice paintwork, good driver-parts and service manuals. Wood trim wheel with white walls. Please call 07476 552398.

CITROEN

AMI 8 ESTATE



1971, 61,000 km, £2,500. Drives well, chassis good, early type with DS style steering wheel. Please call 01462 455280, Hertfordshire.

DATSUN

280 Z 2+2



1983, 46,300 miles, £8,400. Red 280ZX 2+2 Targa automatic. Please call 07776 148291. Northumberland.

FERRARI

348



1993, 82,333 miles, £28,500. Left hand drive, garaged for a few years, in need of restoration. Car all there, rear lights changed, but originals go with. Sensible offers only, asking price or over. Please call 01256 . 783576, Hampshire.

TRIBUTE MX 250



1992, 72,000 miles, £9,950.

Beautifully presented replica of 250 GTO Ferrari. Based on Eunos MX5. In perfect body and mechanical condition and requires nothing. Uprated brakes and dampers. Sale due to los of licence (eyesight), engineer owned, totally reliable insured for £15,000. Please call 01276 23078, Surrey. 10816

FORD

CAPRI



1983, 100,000 miles, £19,900. Stunning X-Pack wide body, 3.5 v8, Stainless Perform. Exhaust, MoT May, immaculate inside/out and not a scratch. Please call 07307 659357.







As eye catching as the Abbey or the Royal Crescent, Cat Heale and her immaculate Morris Minor Convertible (with her dogs Gertie and Naughty George) regularly attract the tourist camera lens in Bath.

Go to www.morrisminor.org.uk/morrisminorstories for the full story.



20 Clothier Road, Brislington, Bristol, BS4 5PS Sales and Restoration: (0117) 300 3754 Parts: (0117 300 3753

CAPRI



1985, 67,000 miles, £21,995.

Special turbo technics, superb mineral blue, unmarked Recaro leather, single TT stainless exhaust and original X frame. Big brakes, full service hsitory and full MoT no advisories. Immaculate. Please call 07721 690681.

ESCORT XR3I



1988, £1,995 Ono. Comes with RS turbo body kit, been standing in a garage a few years, dry stored, all complete apart from fuel injection and manifold missing, comes with V5C logbook, becoming more sought after as years go buy, 1 not to be missed. Please call 07494 626118.

GRANDA



1975, 150,000 miles, £35,000. I have the only American Ford Granada Hot Rod that is in show quality condition in America. It has a new 408 stroker engine with dual quads and much more. Please call 206-327-5739, USA 12461

JAGUAR

XJS V12 LE MANS



1991, 74,000 miles, £24,000. Limited edition of only 250 models. Excellent interior and exterior condition. Cream leather seats with matching colour trims. Automatic with all 'Le Mans' extra features. Brooklands green, FSH plus MoT and only 2 owners. Please call 01620 248226, East Lothian.

MERCEDES-BENZ

380 SL



1985, 108,000 miles, £12,500. It has been off the road around 10 years, it has been recommissioned last year including recent MoT, Silver with grey leather and service history. Please call 07958 488333, Surrey.

MG

MGB ROADSTER



1972, 46,000 miles, £6,950. Tax exempt, full engine rebuild and converted to 12 volt battery and full electronic ignition. Very reliable and in good condition. Extensive history and all MoT certificates. Please call 07790 615143.

MGB ROADSTER



1980, 95,000 miles, £9,995. Will be sold with new years MoT. Has been the subject of total restoration and improvement in recent years. Was a rubber bumper, now having a MK1. Please call 07110 436158.

MIDGET



1980, 22,000 miles, £7,000. Excel condition, full service history, heritage certificate, selling due to age and full garaged. Please call 01989 750711, Hereford.

MINI

CLUBMAN



1980, £15,000. Honda 1.6 vetc, 182BHP, MSUK rally passport, long MoT, show standard competition car and track can or road rocket. Any inspection velone four sets wheels and tyres. Please call 07946 313923, Somerset.

MAYFAIR



1988, 29,000 miles, POA. 12 months MoT, denim blue, not rust no rot, beautifully standard inside and out. Not a better one around for the price and needs viewing to fully appreciate. Please call 07764 306103.

MORRIS

1000



1964, 30,472 miles, £5,899. Work includes 4 new steel wings, 4 doors and boot lid, alternator and servo fitted. Please call 07545 703474, Southampton. (T)

1000 MINOR TRAVELLER



1968, £5,250 ONO. Trafalgar blue recent respray, good woodwork, front disc brakes, s/s exhaust, Bluetooth radio/CD, many small improvements and regular reliable everyday transport. Please call 01296 630225, Aylesbury.



MINOR



89,000 miles, £5,499. A short time in storage. This included 4 new wheel cylinders, water pump and by pass hose, nearside genuine front wing and four new tyres. Please call 07545 703474, Southampton. (T)

PEUGEOT

205 CONVERTIBLE

1987, £350. Bought for my Grandsons "18th" but could not get Insurance. Paid £750 but been stood in garage now for 6 years. Will accept an offer near to £350. Please call 07866 004385.

402 ESTATE



1936, £7,500. For restoration, good body and chassis. Interior complete, just need restoration. Ex-French air ministry in WWII. Possible ex German army. Please call 07931 238911, Powys.

PORSCHE

911 CARRERA



1974, 20,667km, £150,000. 2.7 euro mfi, 210hp type, 911/83 matching numbers, running and driving. Vin number: 9114600660, engine number: 6640879. Black exterior with blue interior, mileages 30667km and in good condition. Please call 96133 62753, Byblos Lebanon.

944 S2



1991, 84,109 miles, £11,995. An exceptionally original Porsche 944 S2 in the ever popular Guards Red (No fading) with contrasting checked sports trim. This particular car also features an electric tilt sunroof, electric windows and electric front seats all in perfect working condition. Please call 01590 612999, Hampshire (T).

ROLLS-ROYCE

SILVER SHADOW II



1980, 60,528 miles, £28,500. Fully documented with full and comprehensive service history. The history file includes the original Handbook folder with a fully stamped service book. Drivers handbook, audio handbook and other Rolls Royce supplements. Please call 01732 886002, Kent (T).

SILVER SPUR II



1991, 94,000 miles, £11,500 Ono. Private sale, immaculate condition inside and out. Pewter grey with cream leather and always serviced with news tyres and springs. Please call 01797 362002, Greatstone.

RENAULT

CARAVELLE



1966, £15,000. Both tops, £17,000+ extensive restoration, 12 month MoT, 1289cc, 123 ignition and brake servo. Please call 01209 890762, Cornwall.

ROVER

GTI



1992, 74,000 miles, £750. Been in storage for 14 years, an appreciating classic, 1992, sound and original not running easy restoration. Please call 07766 704617.

SAAB

900 S AERO TURBO



1990, 122,000 miles, POA. Absolutely beautiful condition. Automatic drives superbly, FSH with receipts. £4850 with 15 inch alloys or £5350 with Carlsson alloys. Please call 07879 118777,

Darlington.

SUNBEAM

TALBOT 90



1953, £3,000. Body sound but needs paint. Mechanically good, many spares of all types, original plates and literature etc. Please call 07759 649889, Cumbria.

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james@ibuyanyclassic.co.uk

SILVER HAWK V8



£POA. Beautiful example, paperwork with the car confirms a Long Beach Neurologist who graduated from the University of California Los Angeles School of Medicine owned the car for many years. Please call 01246 451772, Chesterfield. (T)

TOYOTA

CELICA



1991, 91,800 miles, £9,500. Carlos sainz special edition 4WD turbo no 805 + 5000. Superb condition and owned by me for 20 years. Please call 01252 713075, Surrey.

TRIUMPH

1360 SALOON



1968, 46,000 miles, £3,250 Ono. New clutch, trunnions, track rod ends, front wheel bearings, brakes overhauled new calipers, new alternator and battery. MoT Sept. 2020. Minor bodywork needed. Please call 07816 616109.



HERALD 1147 SALOON



1968, 50,000 miles, £1,000. 68' Herald 1200, needs bodywork doing, all mechanics are in good order. Please call 07580 032571, Chesterfield.

STAG



1974, 46,000 miles, £13,995. Automatic, sapphire blue with contrasting interior. Exceptionally original car and drives faultlessly. Wonderful and detailed history. Please call 01487 842168, Cambridgeshire. (T) 11779

TR4A



1967, £10,995. Parked in a wooden farm barn since 1996. A genuine barn find. Complete and unmolested since that time. The car was previously fitted with rear fibreglass wings in the 80's but other than that the car is like a time warp. Very good solid car. Engine runs and this is probably the most original UK. Please call 01487 842168, Cambridgeshire. (T)

TR5



1969, £74,995. Restored and maintained to concours condition by the current owner. Extensive collection of trophies, outstanding history. If you want the very best TR5 this is it. Please call 01487 842168, Cambridgeshire. (T)

TR5



1968, 20,000 miles, £48,995. A bare metal respray was carried out by marque specialists TR Enterprises, where it had 3 outer wings replaced with original items along with various repairs. It still looks as good as the day it was finished. The engine bay is presentable, please see the pictures. Please call 01623 411476. Eakring. (T)

TR6



1976, £16,495. Inca yellow with overdrive. An unbelievably original body and chassis. Converted to RHD in the early 90's in a very professional manner. Please call 01487 842168, Cambridgeshire. (T)

VITESSE



1970, 80,000 miles, £12,995. 4-speed overdrive, finished in stunning Wedgewood blue with contrasting blue trim. Older nut and bolt rebuild and is a pleasure to drive. Please call 01509 881106. Melton Mowbray. (T)

VAUXHALL

ASTRA



1984, £3,000. Stored for the last 20 years. Non runner and this GTE MKI is complete. Please call 07740 179399, Northants.

ASTRA BELMONT

1990, £400. Light green velour interior, original paint and alloy wheels, pearl red paint needs bodywork, MoT expired Sept 2019 and was very reliable. Please call 01406 330587, Lincolnshire.

SR NOVA



1984, £12,000. Four pot front brakes. Bilstein suspension. 16"x7" alloy wheels with Toyo tyres. Competition exhaust system include some parts. Open to offers. Please call 01732 862613, Kent.

VOLKSWAGEN

BEETLE



1973, £29,000. Porsche boxster, 2.7L engine and mechanicals. Please call +264 811275599 or email idcqs@iway.na

1965, £10,500. Java green restored, new floor pans, petrol tank, wiring 100m, bakes and gearbox reconditioned. Please call 07772 416950, Warwickshire.

CORRADO VR6



1995, 160,000 miles, £4,600. Rare Vento Cup alloys, Weitec coilovers, Milltek exhaust, BMC intake, Momo Tuner steering wheel, rebuilt gearbox and engine top half, black cloth interior, MoT September 2020, comprehensive history including original bill of sale and spare key. Please call 07463 796312, Surrey.

GOL F



1999, £1,899. Manual box, electric windows, power steering, power hood, 2 keys, remote central locking, abs brakes, 16" BBS alloys, in black, recently had a new gearbox. Please call 07545 703474, Southampton. (T)

LUPO

2001, 80,000 miles, £1,250. 1.4 16 Valve. Canary Yellow with electric Fabric Roof, Alloy Wheels, MoT May 2020, service history. Excellent Condition Please call 01952 550212, Shropshire.

MK2 GTI 16V

96,000 miles, £13,799. The Golf has the added factory option of electric front windows which is a feature which is not seen too often in a vehicle of this age. This example of the Golf GTI features the 16v engine, known for being the engine with that little 'extra' power. Please call 01454 501314, Bristol. (T)

VOLVO

440XI

1993, 63,000 miles, £1,200. Green, MoT till July 2020, FSH, new cam belt and more and overal excellent condition. Please call 01793 812408. Wiltshire.

960

1991, £1,200 0NO. 3 litre, 6 cylinder model, rare car now, high spec, excellent original blue metallic paintwork, excellent leather interior, dry stored for the last 5 years and would make a really beautiful car with minimal work. Please call 01765 677178 or 07729 356029, Yorkshire.

C70 COUPE



2000, 64,000 miles, £2,000. Petrol, manual gearbox, full leather interior, 3 owners, very good condition for year, currently on sorn and dry stored. Contact for details. Please call 01269 845195, South Wales.



TIPS, TRICKS AND NOSTALGIA FROM A LIFETIME IMMERSED IN OLD CARS ANDREW EVERETT

IT'S A KIND OF CLASSIC CAR VANDALISM

I'd like to talk (or rant?) about car restoration this month, and how in my view it almost borders on vandalism. After all, if you see old pictures of furniture such as a vintage Chesterfield, do you see them restored to as-new condition? No. Does Shakespeare's house look like the day it was built, every tile on the roof freshly minted? Of course not, and to do such a thing would cause an outcry because one you go down that road, what you have just restored isn't old anymore.

So why do cars differ? I'll give you an excellent example of why this concours infatuation is so wrong: the ex-Elvis Presley BMW 507. This was discovered a while back in the USA after The King had it shipped back in an already modified state - a different and more powerful 3.2 V8 and a colour change from white to red. When found, it was dusty and decrepit but still pretty solid although it was missing the lovely OHV all alloy V8 which had since been replaced by a General Motors V8, three speed auto and rear axle. The original BMW

engine has never been found.

Now, the car needed a complete restoration as this was not just going to be a simple 'fire it up, clean up and MoT' job. The restoration by BMW in Munich took two years and it is the best restoration I have ever seen with panels carefully unstitched, chassis blasted and so on – the quality of the work really is outstanding. But the result is a brand new 507 in Chalk White, just as it left the factory before Elvis ever took the wheel. Every last piece of chrome and all the trim – all replaced and thus completely erasing this history of the world's most famous 507.

I'm probably not alone in shaking my head in disbelief at this. I'm certainly not the only one who would have saved every last piece of usable trim and done my utmost to repair it. The steering wheel would be made useable with some coloured tape around the cracks, the window winders and door handles cleaned up with T Cut, the instruments given some elbow grease.

After all, this is the car in which Elvis took Priscilla out on dates,

so why erase all that history? The steel wheels could have been rubbed down and given a coat of clear lacquer over the decrepitude, and the car given a reasonably good paint job in the same red as Elvis chose.

I'd stop short of retaining the Chevrolet small block, but the hotted up 3200 V8 doesn't need all new nuts and bolts as the old ones are fine, and no vapour blasting the alloy castings please. Of course, under the skin it can be like new with the frame blasted and powder coated, new nuts and bolts, brakes, springs and the stuff that makes a car work and keeps it reliable, but on top and in the areas you can see, touch and smell, it has to retain a connection with the past if it is to have any kind of character.

In short, if I were to do this restoration it would look exactly as it did when it landed at the docks in the United States. It would get a good smothering of underbody wax blasted into it and it'd be taken out and used on a big road trip across the USA with Lisa Marie at the controls, chain smoking Marlboros and using it as a car should be used.

Sadly that's not going to happen. Chassis number 70079 now has a glittering yet sterile career ahead of it sitting in a museum, shown off at various ghastly classic car events and occasionally driven very carefully by selected journalists. And I'm sure I won't be one of them.

To me and countless others, the whole point of old cars is that they are old. The newness has long gone and in its place is history, several owners in the logbook and usability. What do you do with an ultra low mileage perfect concours car? Well, I know what I'd do with it and that involves a gallon of Dinitrol and a four figure mileage limit on the insurance policy. This is because cars are meant to be used. Who, upon taking delivery of a 507, an E Type or a 300SL Gullwing, squirrelled it away, polished the insides of the wheels, did a few miles a year and entered them into glorified polishing contests? Nobody, that's who.

Old cars are about nostalgia, and that's a great place to visit now and again. At the recent NEC classic car show, I spent the Friday wandering about looking at stuff and I found some of the most interesting cars this year on the various dealers stands. Ignoring for a moment the hairraising prices being asked (since when is a Mk1 Escort RS2000 worth 20 grand more than a Porsche 996 Turbo?) it is there that I found the car that I would have taken home. Not a 512BB or an early pre-HE XJ-S, but a beige 1968 Morris Mini 1000, the Hydrolastic Mk2 variety.

The Mk2 Mini was only made for two years so they're already very rare, but this one just invited me to open the door to its red vinyl interior, and the smell of 50 year old BMC vinyl and felt carpets wafted out and took me back to my youth. Right there and then I could have jumped in, pulled the choke out halfway, flicked the centre start key and driven off. This is what BMW Classic failed to grasp with the Elvis 507. It's not about how perfect you can make something old - with no reminders of its age, what's the point?.



Andrew would have kept the patina of Elvis' BMW as it was found.

NEXT ISSUE IN BUSSIES





THE ORIGINAL AUDI QUATTRO **TOP TEN TRIVIA OF A ROAD & RALLY LEGEND**



SUNBEAM RAPIER SERIES IIIA WITH ONE PASSIONATE OWNER SINCE 1972



1954 BOND MINITRUCK MKC
THE SOLE SURVIVING EXAMPLE IS RESTORED

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- **Emerging Classic: Rover Streetwise**
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21 & 22 MARCH 2020 SANDOWN PARK





